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MEGAPLEX, CONVENTION CENTER, and STADIUM FEASIBILITY ANALYSIS

FINAL REPORT

February 5, 1993

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February 5, 1993

Mr. Stephen P. Tocco
Secretary of Economic Affairs
Executive Office of Economic Affairs (EOEA)
One Ashburton Place, Suite 2101
Boston, MA 02108

Mr. Kevin M. Smith
Commissioner
Division of Capital Planning and Operations (DCPO)
One Ashburton Place, Suite 2101
Boston, MA 02108

Dear Secretary Tocco and Commissioner Smith:

Our project team is pleased to present the results of the analysis of potential options related to the development of stadium and/or exhibition facilities within the Commonwealth of Massachusetts. The accompanying report entitled "Megaplex, Convention Center, and Stadium Feasibility Analysis" is presented in two volumes. Volume I contains the market, operating, economic impact and financing analysis. Volume II pertains to the site analysis, project costs and concept plans. Preceding the Volume I and II reports is an Executive Summary which presents the key findings of the study results.

Our report, as set forth in Volumes I and II, is based on estimates, assumptions, information developed from research and knowledge of the industry, as well as meetings with you and other representatives of the Commonwealth, local communities and governmental agencies. The sources of the information and bases of the estimates and assumptions are set forth in the report. As in any project of this nature, some assumption inevitably will not materialize, and unanticipated events and circumstances may occur. As such, actual results achieved during the periods covered by our analysis will vary from our estimates and the variations may be material.

This report has been structured to provide you and other representatives of the Commonwealth with the information necessary for making informed decisions related to the study process and the proposed project(s) and should not be used for any other purpose. Neither the report nor its contents may be included or quoted in any offering circular or registration statement, or any other type of financing document.

We sincerely appreciate the assistance and cooperation provided by the EOEA and the DCPO in the completion of this report. Also, we appreciate the assistance provided by the Massachusetts Convention Center Authority, the Boston Redevelopment Authority, the Greater Boston Convention & Visitors Bureau, Inc., the Foxboro Stadium Associates, the New England Patriots Football Club, area hotel representatives, various other local and state agencies and individuals associated with the projects under consideration in this report in performing this analysis. We would be pleased to be of further assistance in the interpretation and application of the study results and findings.

Very truly yours,

Coopers & Lybrand

COOPERS & LYBRAND

Executive Summary

COMMONWEALTH OF MASSACHUSETTS

MEGAPLEX, CONVENTION CENTER, and STADIUM FEASIBILITY ANALYSIS

FINAL REPORT

EXECUTIVE SUMMARY

February 5, 1993

Executive Summary

In March of 1992, the Commonwealth of Massachusetts, through the Division of Capital Planning and Operations (DCPO), issued a request for proposals for a consultant(s) to perform a study to provide a financial feasibility analysis for the proposed Massachusetts Professional Sports Complex - Project No. DCP 92-1-STU. Through the review of the consultants written proposals and subsequent interviews, the consulting team of Coopers & Lybrand, Howard Needles Tammen & Bergendoff, Sverdrup Corporation, Bear Stearns, Gadsby & Hannah and Opinion Dynamics Corporation was selected to perform the study on behalf of the Commonwealth. The study commenced in June of 1992.

This submission represents the results of the aforementioned study and is intended to provide the DCPO and the Commonwealth of Massachusetts with a planning tool for evaluating various potential development options regarding convention, exhibition and stadium facilities. This submission has been presented in two volumes. Volume I contains the market, operating, economic impact and financing analysis. Volume II pertains to the site analysis, project cost and concept plans.

This executive summary presents the key findings of the study results. Both Volumes I and II should be read in their entirety in order to obtain the background, methodology and assumptions underlying the findings.

Primary Analysis and Findings

In performing this study, four primary development concepts were considered:

- **Megaplex** - integrating exhibition, meeting and banquet space, and enclosed fixed seating facilities. Such a development could accommodate convention and trade show events, professional, collegiate and amateur sporting events (except baseball) and other fixed seating events such as concerts, motor sports, festivals and other such functions. In addition, a megaplex could accommodate large national and international sporting events, political conventions, and other major non-recurring events, such as the NFL Super Bowl and the NCAA Final Four.

- **Stand Alone Convention Center** - encompassing dedicated exhibition, meeting and banquet space. Such a facility could accommodate major conventions and trade events, consumer shows, large meetings and conferences and other events requiring traditional convention center amenities.

- **Stand Alone Stadium Facilities** - which provides two development options, domed and open air, both of which could accommodate varying level of professional, collegiate and amateur sporting events, concerts, motor sports and other traditional fixed seating events. As with the megaplex, the domed stadium option could accommodate major sporting events such as the NFL Super Bowl and the NCAA Final Four.

The analyses related to these development concepts focused on convention/exhibition events which could be accommodated at either a megaplex or a stand alone convention center, and stadium events, which could be accommodated at a megaplex or stadium only development. The analysis findings are summarized throughout this briefing.

Market Analysis - Convention/Exhibition Events

- In analyzing the market potential for convention/exhibition space in the Commonwealth of Massachusetts, over 300 hundred surveys of event organizers from throughout the country were conducted.

- These surveys were designed to measure the market potential unique to the Boston area and other specific regions throughout the State.

- Approximately 35 percent of those surveyed indicated interest in holding an event in Massachusetts.

- Of those responding positively to holding an event in the State, over 50 percent indicated that they would definitely hold their event in Massachusetts.

- Through these surveys, detailed profiles of event characteristics were developed including exhibition, meeting and ballroom requirements, hotel needs, attendance levels and length of event.

- In terms of facility location within the Commonwealth, the majority of event promoters indicated a strong preference for a Boston location, with greatly diminished preference for outlying areas.

- The lack of significant adjacent or nearby convention hotels and other visitor attractions is the primary reason for lack of exhibition space demand outside the immediate Boston area.

- Based on the results of the market analysis, the Boston area can support significantly higher exhibition, meeting and general assembly space compared to other sites within the Commonwealth.

- The level of exhibition space which may be supported from a market perspective in the Boston metropolitan area ranges from 400,000 to 500,000 gross square feet.

- Boston currently has three convention/exhibition facilities that could impact future facility development: the John B. Hynes Convention Center; the Bayside Expo Center; and the World Trade Center.

- As the Bayside Expo Center and the World Trade Center house local consumer/public show demand, the John B. Hynes Convention Center is the primary facility in the Boston area with the established purpose of attracting and accommodating large conventions and trade shows focused on out-of-state attendees.

- At the present time, none of the existing facilities can accommodate the full potential demand estimated for the Boston area due to size constraints and/or operating focus of the existing facilities. Therefore, additional opportunity exists for attracting and accommodating incremental convention/exhibition demand.

- The development of a megaplex or a stand alone convention center with between 400,000 to 500,000 square feet of exhibition space would enable the Boston metropolitan area to accommodate the market demand which the area currently is unable to accommodate due to facility constraints.

- The megaplex development, which would provide an additional 180,000 square feet of space on the stadium floor suitable for exhibition use, could generate exhibition space utilization levels of approximately 10 percent higher than those generated at a stand alone convention center.

- It is not anticipated that a megaplex option would compete directly with the event markets of the New Boston Garden.

- As the events which are currently held at the Hynes could be accommodated in a megaplex or stand alone convention center, the Hynes will likely need to be refocused to other market segments, including international seminars, and congresses, large meetings and the conference uses of other such market segments.

- A separate analysis should be undertaken to focus on the market potential for the repositioning of the Hynes, the potential for joint marketing and operational relationships between the Hynes and any new facility development.

Market Analysis - Stadium Events

- Stadium event organizers focus on area population levels and the favorability of specific facility rental/promotional agreements when selecting venues.

- Based on the results of the market analysis, the development of a stadium on various sites throughout the State could be successful in generating event levels comparable to other professional sports stadiums throughout the country.

- It has been assumed that the stadium would be the home of the National Football League New England Patriots, thereby, providing for 10 professional football games annually.

- The analysis assumes that the Major League Baseball Red Sox would remain at Fenway Park and therefore, would not be a tenant in any of the development options analyzed.

- A domed stadium could attract approximately 17 to 22 nonprofessional sporting events annually. These events include concerts, motor sporting events, and college and high school sports.

- An open-air stadium could attract approximately 13 to 17 nonprofessional sporting events annually.

- In addition, other events such as Boston College football and special events such as the NCAA Final Four, NFL Super Bowl, and other holiday bowl games may be attracted to a new enclosed stadium facility, depending on the location of the facility and roof structure.

- It is recommended that stadium development plans accommodate 65,000 to 75,000 seats, including 5,500 to 6,500 club seats and 100 to 160 private suites.

- It is not anticipated that any of the stadium development options would compete directly with the event markets of the New Boston Garden.

Site Selection and Ranking

The site selection was performed in two phases, the first phase represented a threshold evaluation of various sites in terms of certain minimum requirements. Once a short list was developed, Phase II involved a detailed site evaluation and ranking.

Phase I - Site Assessment

- The Commonwealth, through the Executive Office of Economic Affairs and the Division of Capital Planning and Operations, published Requests for Site Information in August of 1992.

- A total of 20 sites were submitted and reviewed as part of the preliminary site analysis.

- The purpose of the preliminary site evaluation was to develop a short list of viable sites for further detailed analyses.

- The minimum requirements for which each site was evaluated are as follows:

    - Adequate land size, configuration,
    - No significant wetlands, hazardous waste or other environmental problems,
    - Accessibility to highway and fixed rail transit, and
    - Compatibility with surrounding developments and accessible to patron base.

- Any site which did not sufficiently meet each of these requirements was excluded from further consideration.

- Those sites which met each of the minimum requirements were as follows:

  - Boston - South Bay area
  - Boston - State Hospital
  - Cambridge
  - Foxboro
  - Lynn
  - Worcester

- All of the sites which met the minimum requirements were subjected to a detailed analysis as potential stadium sites. However, based on the results of the market analysis and the strong preference by event promoters for a downtown Boston location, only the Boston - South Bay and Cambridge sites were reviewed as potential locations for the megaplex and convention center developments.

Phase II - Numerical Ranking and Concept Plans

- A Site Evaluation Matrix, as presented in Exhibit ES-1, was established by which the six sites were evaluated for their ability to support a stand alone stadium. Criteria were selected, rated and weighted for each of the sites based upon available data and the collective experience and judgement of the consulting team.

- The potential stadium development sites and their cumulative rankings are shown below.

Site	Points
Boston - South Bay	394
Worcester	354
Cambridge	349
Foxboro	328
Lynn	284
Boston - State Hospital	241

- The Boston - South Bay site rated the highest in ability to support a stand alone stadium, based primarily on its superior transit, rail and highway attributes, as well as site planning and potential economic development considerations.

Exhibit ES - 1
Massachusetts Stadium/Exhibition Facilities Analysis
Public Assembly Facility Development Analysis
Site Matrix

SITE EVALUATION MATRIX	Raw Scores (0 - 5)						%	Weighted Scores					
	A	B	C	D	E	F	WT	A	B	C	D	E	F
A. Traffic and Access (30% Weight)													
1. Traffic Movements (Ingress & Egress)	5	1	4	3	1	4	7	35	7	28	21	7	28
2. Traffic Impacts on Adjacent Areas	5	1	2	3	1	3	5	25	5	10	15	5	15
3. Parking Availability/Sufficiency	5	3	3	5	4	4	5	25	15	15	25	20	20
4. Pedestrian	1	1	5	1	2	4	2	2	2	10	2	4	8
5. Metropolitan Access	5	2	4	2	2	4	4	20	8	16	8	8	16
6. Mass Transit	5	2	4	2	3	3	7	35	14	28	14	21	21
B. Engineering (10% Weight)													
1. Geotechnical	1	5	1	5	1	5	3	3	15	3	15	3	15
2. Utilities	4	2	4	5	4	4	2	8	4	8	10	8	8
3. Environmental Considerations	2	3	2	5	2	2	5	10	15	10	25	10	10
C. Size and Fit (10% Weight)													
1. Size of Parcel/Expandibility	4	5	4	5	4	4	10	40	50	40	50	40	40
D. Planning considerations (25% Weight)													
1. Compatibility to Existing Neighborhoods	5	1	3	4	3	3	7	35	7	21	28	21	21
2. Noise and Lighting	5	2	4	3	4	3	1	5	2	4	3	4	3
3. Potential for Adjacent Outdoor Recreational Uses	3	3	4	3	3	2	5	15	15	20	15	15	10
4. Potential for Adjacent Civic/Cultural Uses	2	1	4	1	4	4	5	10	5	20	5	20	20
5. Potential for "Image" or Landmark Setting	5	1	4	1	4	4	7	35	7	28	7	28	28
E. Economic Impact (10% Weight)													
1. Potential for Adjacent Induced Development	5	1	5	1	4	5	10	50	10	50	10	40	50
F. Land Acquisition/Development Cost (15% Weight)													
1. Timing/Availability	3	4	2	5	2	3	3	9	12	6	15	6	9
2. Ownership	3	5	2	5	2	2	4	12	20	8	20	8	8
3. Cost	2	2	2	5	2	4	4	8	8	8	20	8	16
4. Relocation of Existing	3	5	4	5	2	2	4	12	20	16	20	8	8
TOTALS								394	241	349	328	284	354

Key

A	*Boston - South Bay Area*
B	*Boston - State Hospital*
C	*Cambridge*
D	*Foxboro*
E	*Lynn*
F	*Worcester*

- Conceptual stadium layouts were developed for four sites -- Boston - South Bay, Cambridge, Lynn and Worcester -- to indicate possible access and arrangement of a stadium on the site. The proponents of the Foxboro site provided a sketch of the concept of an expanded and renovated Foxboro Stadium.

- Conceptual megaplex and stand alone convention center layouts were also prepared for the two potential megaplex and convention center sites -- Boston - South Bay and Cambridge -- to indicate access and arrangement of facilities on the site.

Project Cost Summary

- Exhibit ES-2 presents a summary of the hard costs, infrastructure and soft costs associated with each of the development options.

- As outlined in the Exhibit, development costs associated with the megaplex range from approximately $694 million to $728 million, depending on the specific site.

- Development of a convention center facility, which does not include a significant fixed seating component, ranges from approximately $382 million to $420 million, depending on the project site.

- Project costs for a new stand alone open air stadium development range from approximately $257 million to $350 million, depending on the specific site.

- The development option related to the renovation of the existing stadium in Foxboro is estimated to have project costs of approximately $83.1 million. The project costs include approximately $50 million for renovation of the facility, and do not include land acquisition or the purchase of the existing facility which would likely be required if the Commonwealth were to fund the improvements to the stadium.

- The development costs for a domed stadium range from approximately $451 million to $544 million.

- It should be noted that the facility costs at the Boston - South Bay, Cambridge and Worcester locations include between $60 and $84 million in parking construction costs. This parking would likely attract non-event parkers which have not been included in the revenue estimates for facilities. This is

Exhibit ES–2
State of Massachusetts
Public Assembly Facility Development Analysis
Construction Cost Summary

	Boston – South Bay	Cambridge	Worcester	Lynn	Foxboro
Megaplex					
■ Hard Costs	$435,000,000	$435,000,000	– – –	– – –	– – –
■ Infrastructure	140,000,000	168,100,000	– – –	– – –	– – –
■ Soft Costs	119,300,000	125,200,000	– – –	– – –	– – –
Total	$694,300,000	$728,300,000	– – –	– – –	– – –
Stadium – Open Air					
■ Hard Costs	$135,000,000	$135,000,000	$135,000,000	$135,000,000	* $50,000,000
■ Infrastructure	134,400,000	165,100,000	169,300,000	84,200,000	18,700,000
■ Soft Costs	43,700,000	49,800,000	44,900,000	37,800,000	14,400,000
Total – Open Air	$313,100,000	$349,900,000	$349,200,000	$257,000,000	$83,100,000
Incremental Dome Cost	$194,400,000	$194,400,000	$194,400,000	$194,400,000	– – –
Total – With Dome	$507,500,000	$544,300,000	$543,600,000	$451,400,000	– – –
Convention Center					
■ Hard Costs	$192,500,000	$192,500,000	– – –	– – –	– – –
■ Infrastructure	131,600,000	163,600,000	– – –	– – –	– – –
■ Soft Costs	57,800,000	64,000,000	– – –	– – –	– – –
Total	$381,900,000	$420,100,000	– – –	– – –	– – –

Source: Sverdrup Corporation, HNTB

* Costs represent the capital requirements for the renovation of the existing stadium, infrastrucutre improvements and soft costs. The costs do not include capital costs associated with land acquisition or purchase of the stadium.

particularly relevant to the South Bay site due to the site's accessibility to downtown and airport destinations. Therefore, it may be possible to have some or all of the costs associated with the aforementioned facilities' parking financed by parties other than those directly associated with facility development.

Financial Operating Analysis

- The analysis of the financial operations of the proposed facility development has been prepared for megaplex, domed and open air stadium, and convention center development on each of the applicable sites.

- Estimates of project revenues and expenses for each type of development have been prepared based on recent operating results of comparable facilities around the country, with adjustments made for the local market in the case of certain revenue items, including stadium components such as private suites, club seats and advertising.

- Operating expenses for the megaplex development reflect the expectation that economies of scale will be experienced by operating the convention center and stadium components together.

- Specific assumptions have been made regarding stadium revenue streams such as ticket, concession, novelty and other such revenues that would be split between the team and facility operator. Because lease agreements between NFL teams and facility operators vary greatly around the League, three scenarios have been presented. The first is based on specific lease terms more favorable to the franchise, the second a more neutral agreement and the third more favorable to the facility operator.

- A summary of the financial operating (shortfall)/surplus for each development option, in 1998 dollars, is presented in Exhibit ES-3. Operating results presented in Scenario 1 are consistent between location due to the assumed lease structure which provides for a lump sum payment to the facility, not tied directly to facility/team revenues. Scenarios 2 and 3 represent lease structures based on sharing percentages of facility/team revenues, which vary by location.

- Depending on the lease scenario, the operation of the megaplex is estimated to result in an operating shortfall of $8.8 million or a surplus $2.5 million.

Exhibit ES – 3
State of Massachusetts
Public Assembly Facility Development Analysis
Operating Surplus/Shortfall – 1998 Dollars

	Scenario 1	Scenario 2	Scenario 3
Megaplex			
■ Boston/Cambridge	($8,766,000)	($3,865,000)	$2,538,000
Domed Stadium			
■ Boston/Cambridge	($3,323,000)	$1,453,000	$7,731,000
■ Worcester	($3,323,000)	$512,000	$5,849,000
■ Lynn	($3,323,000)	$757,000	$6,339,000
Open Air Stadium			
■ Boston/Cambridge	($1,211,000)	$3,508,000	$9,729,000
■ Worcester	($1,211,000)	$2,573,000	$7,859,000
■ Lynn	($1,211,000)	$2,818,000	$8,348,000
■ Foxboro	($1,211,000)	$1,995,000	$6,702,000
Convention Center			
■ Boston/Cambridge	($8,388,000)	($8,388,000)	($8,388,000)

Source: Coopers & Lybrand

- The operations of a convention center, not subject to the specific lease agreements assumed in scenarios 1 through 3, provide for a consistent operating shortfall of approximately $8.4 million.

- Open air stadium development represents the least costly development option from an operations standpoint. Depending on the lease scenario, financial operating results range from a shortfall of approximately $1.2 million to a surplus of approximately $9.7 million, for the facility operator.

- When comparing the estimated operating results of the megaplex to a combination of a convention center and open air or domed stadium, the megaplex represents the less costly development option.

Economic and Fiscal Impact Analysis

- The construction and operation of the megaplex, convention center or stadium only facility will have an economic and fiscal impact on the local and state economy.

- The economic benefits associated with the project development options are divided into two distinct components: construction and operations.

- The economic impacts associated with facility construction are one time impacts on the economy which occur over the term of the construction period. The economic impact associated with facility operation is an ongoing benefit, typically quantified in terms of annual impacts on the economy.

- Exhibit ES-4 outlines the economic impacts on the local and state economies associated with the construction period for the various development options and site locations. The economic impacts are presented in terms of total output, earnings and employment. Exhibit ES-5 outlines the fiscal or tax benefits associated with the construction period.

- The construction period impacts related to the megaplex, convention center and new stadium development are significant to the Commonwealth and local economies.

- The renovation of Foxboro produces lower construction period impacts due to the reduced construction costs of this development option.

Exhibit ES – 4
State of Massachusetts
Public Assembly Facility Development Analysis
Summary of Construction Period Economic Impacts – Local Area

Location	Total Direct Spending	Adjusted Direct Spending (2) (3)	Total Output	Earnings	Employment
Megaplex Facility					
Boston	$694,300,000	$519,840,000	$1,035,625,000	$310,656,000	12,000
Cambridge (1)	$728,300,000	$578,160,000	$1,151,810,000	$345,508,000	13,400
Stadium Only Facility–Domed					
Boston	$507,500,000	$370,400,000	$737,911,000	$221,351,000	8,600
Cambridge	$544,300,000	$430,960,000	$858,559,000	$257,542,000	10,000
Worcester	$543,600,000	$352,950,000	$660,958,000	$198,268,000	7,700
Lynn	$451,400,000	$296,550,000	$555,340,000	$166,585,000	6,400
Stadium Only Facility–Open Air					
Boston	$313,100,000	$214,880,000	$428,084,000	$128,412,000	5,000
Cambridge	$349,900,000	$275,440,000	$548,732,000	$164,603,000	6,400
Worcester	$349,200,000	$207,150,000	$387,923,000	$116,365,000	4,500
Lynn	$257,000,000	$150,750,000	$282,305,000	$84,683,000	3,300
Foxboro (4)	$83,100,000	$62,325,000	$116,714,000	$35,011,000	1,400
Stand Alone Convention Center					
Boston	$381,900,000	$269,920,000	$537,735,000	$161,304,000	6,200
Cambridge	$420,100,000	$331,600,000	$660,614,000	$198,164,000	7,700

Source: Sverdrup Corporation, HNTB and Coopers & Lybrand

(1) Three estimates were provided; the high end estimate was used in estimating construction period economic impact.

(2) Land acquisition costs have been excluded for the calculation of economic impact. Furthermore, it is assumed that 80% of the construction spending is incurred in Boston/Cambridge for facility development in these areas. Seventy–five percent of the construction spending is expected to take place in the local area for facility development on other sites throughout the State.

(3) It is assumed that 85% of the construction cost will be incurred in the State.

(4) Costs represent the capital requirements for the renovation of existing stadium, infrastructure improvements and soft cost. The costs do not include capital costs associated with land acquisition or purchase of the stadium.

Exhibit ES – 4
State of Massachusetts
Public Assembly Facility Development Analysis
Summary of Construction Period Economic Impacts – Statewide (continued)

Location	Total Direct Spending	Adjusted Direct Spending (2) (3)	Total Output	Earnings	Employment
Megaplex Facility					
Boston	$694,300,000	$552,330,000	$1,201,483,000	$383,538,000	14,900
Cambridge (1)	$728,300,000	$614,295,000	$1,336,276,000	$426,566,000	16,600
Stadium Only Facility–Domed					
Boston	$507,500,000	$393,550,000	$856,089,000	$273,281,000	10,600
Cambridge	$544,300,000	$457,895,000	$996,059,000	$317,962,000	12,400
Worcester	$543,600,000	$400,010,000	$870,142,000	$277,767,000	10,800
Lynn	$451,400,000	$336,090,000	$731,097,000	$233,381,000	9,100
Stadium Only Facility–Open Air					
Boston	$313,100,000	$228,310,000	$496,643,000	$158,538,000	6,200
Cambridge	$349,900,000	$292,655,000	$636,612,000	$203,220,000	7,900
Worcester	$349,200,000	$234,770,000	$510,695,000	$163,024,000	6,300
Lynn	$257,000,000	$170,850,000	$371,650,000	$118,638,000	4,600
Foxboro (4)	$83,100,000	$70,635,000	$153,652,000	$49,049,000	1,900
Stand Alone Convention Center					
Boston	$381,900,000	$286,790,000	$623,854,000	$199,147,000	7,700
Cambridge	$420,100,000	$352,325,000	$766,413,000	$244,654,000	9,500

Source: Sverdrup Corporation, HNTB and Coopers & Lybrand

(1) Three estimates were provided; the high end estimate was used in estimating construction period economic impact.

(2) Land acquisition costs have been excluded for the calculation of economic impact. Furthermore, it is assumed that 80% of the construction spending is incurred in Boston/Cambridge for facility development in these areas. Seventy–five percent of the construction spending is expected to take place in the local area for facility development on other sites throughout the State.

(3) It is assumed that 85% of the construction cost will be incurred in the State.

(4) Costs represent the capital requirements for the renovation of existing stadium, infrastructure improvements and soft cost. The costs do not include capital costs associated with land acquisition or purchase of the stadium.

Exhibit ES – 5
State Fiscal Benefit Calculations for Facility Development Options
Construction Period Impacts

	Sales and Meals Tax Revenue	Personal Income Tax Revenue	Total Fiscal Benefit
Megaplex			
Boston	$8,861,000	$15,035,000	$23,896,000
Cambridge	$9,855,000	$16,721,000	$26,576,000
Stadium Only – Domed			
Boston	$6,314,000	$10,713,000	$17,027,000
Cambridge	$7,346,000	$12,464,000	$19,810,000
Worcester	$6,417,000	$10,888,000	$17,305,000
Lynn	$5,392,000	$9,149,000	$14,541,000
Stadium Only – Open Air			
Boston	$3,663,000	$6,215,000	$9,878,000
Cambridge	$4,695,000	$7,966,000	$12,661,000
Worcester	$3,766,000	$6,391,000	$10,157,000
Lynn	$2,741,000	$4,651,000	$7,392,000
Foxboro	$1,133,000	$1,923,000	$3,056,000
Stand Alone Convention Center			
Boston	$4,601,000	$7,807,000	$12,408,000
Cambridge	$5,652,000	$9,590,000	$15,242,000

Source: Coopers & Lybrand

- Exhibits ES-6 and ES-7 outline the economic impacts associated with the operation of the megaplex, convention center and the stadium only facilities. As with the construction period, the economic impacts are shown in terms of total output, earnings and employment.

- As outlined in Exhibits ES-6 and ES-7, estimates of total output associated with the operations of the megaplex reach over $1.0 billion in 1998 dollars. The level of earnings associated with this output is estimated at approximately $359 million, with an employment impact of approximately 13,300.

- The economic impact associated with the convention center development option, which does not include a significant fixed seating component, is estimated to reach appropriately $751 million in total output in 1998 dollars, with earnings and employment impacts of approximately $271 million and 9,400, respectively.

- In evaluating the economic impact of a stadium only facility (domed or open air), the significant impacts associated with convention and exhibition activity are lost. The economic impact that is associated with stadium operations is generated primarily through fan purchases and other activity associated with the Patriots NFL franchise.

- Considering the stadium only development option, the total output levels reach approximately $147 million to $175 million in 1998 dollars, depending on the location and roof structure of the facility. Earning impacts range from approximately $49 to $58 million, with employment impacts ranging from 2,500 to 2,900.

- The fiscal benefit associated with the various development options are generated through increased tax revenues to the economy associated with the direct and indirect economic impacts.

- As outlined in Exhibit ES-8, approximately $63 million in fiscal impact associated with megaplex operations could be generated for the state, with approximately $8.5 million being generated annually in local (Boston metropolitan area) tax revenue, totaling approximately $71.5 in combined fiscal impact.

- The fiscal impacts for a convention center facility are estimated to range from $45.5 million on a state-wide basis, and $7.6 million on a local basis, in 1998 dollars, resulting in a combined fiscal impact of approximately $53.1 million.

Exhibit ES – 6
Massachusetts Stadium/Exhibition Complex Analysis
Summary of Megaplex and Stand Alone Convention Center Economic Impacts
Operations

	Total Output	Earnings	Employment (1)
Megaplex (2):			
Exhibition Related Impacts	$832,554,000	$300,944,000	10,400
Fixed Seating Related Impacts	$174,493,000	$58,399,000	2,900
Boston/Cambridge Megaplex	$1,007,047,000	$359,343,000	13,300
Convention Center (3):			
Boston/Cambridge	$751,047,000	$271,482,000	9,380

Source: Coopers & Lybrand

(1) Employment impacts are measured in terms of units of employment contributed to the economy. Some part of these impacts will likely take the form of retained employment or the increased security of existing jobs.

(2) Approximately 65 percent of exhibition related economic impact or $541 million in total output, $196 million in earnings and 6,760 in employment is incremental to the Commonwealth, assuming that the Hynes does not attract any additional new activity to the existing facility upon completion of the megaplex. If the Hynes is able to refocus its marketing to attract new market segments and event activity which is not currently being attracted to the Commonwealth or Boston area, total economic impact would increase, creating additional incremental impact to the Commonwealth and Boston economies.

The majority of the stadium/franchise portion, approximately 90 percent, of the economic impact currently exists within the Commonwealth as the Patriots currently make Massachusetts their home. Therefore, as long as the Patriots remain in Massachusetts these benefits will continue to accrue to the Commonwealth economy.

(3) The incremental economic impact related to the stand alone convention center is approximately 61 percent of the economic impact or $458 million in total output, $166 million in earnings and 5,720 in employment.

Exhibit ES – 7
Summary of Domed and Open Air Stadium Economic Impacts
Economic Impacts – 1998 Dollars
Operations

	Total Output	Earnings	Employment (1)
Domed Stadium (2)			
Boston/Cambridge	$174,493,000	$58,399,000	2,900
Worcester	$155,730,000	$52,119,000	2,590
Lynn	$157,713,000	$52,783,000	2,620
Open Air Stadium (2)			
Boston/Cambridge	$168,037,000	$56,238,000	2,790
Worcester	$149,968,000	$50,191,000	2,490
Lynn	$151,878,000	$50,830,000	2,520
Foxboro (3)	$147,307,000	$49,300,000	2,450

Source: Coopers & Lybrand

(1) Employment impacts are measured in terms of units of employment contributed to the economy. Some part of these impacts will likely take the form of retained employment or the increased security of existing jobs.

(2) The majority of the stadium/franchise portion, approximately 90 percent, of the economic impact currently exists within the Commonwealth as the Patriots currently make Massachusetts their home. Therefore, as long as the Patriots remain in Massachusetts these benefits will continue to accrue to the Commonwealth economy.

(3) This analysis assumes that the proposed renovations planned for the stadium in Foxboro will provide for facility amenities comparable to new facility construction.

[illegible]

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

[illegible]

[illegible]

Exhibit ES – 8
State of Massachusetts
Public Assembly Facility Development Analysis
Fiscal Impacts – 1998 Dollars

	State	Local	Total
Megaplex (1)			
■ Boston/Cambridge	$63,016,000	$8,511,000	$71,527,000
Domed Stadium (2)			
■ Boston/Cambridge	$12,529,000	$65,000	$12,594,000
■ Worcester	$11,182,000	$58,000	$11,240,000
■ Lynn	$11,324,000	$59,000	$11,383,000
Open Air Stadium (2)			
■ Boston/Cambridge	$12,065,000	$63,000	$12,128,000
■ Worcester	$10,768,000	$56,000	$10,824,000
■ Lynn	$10,905,000	$57,000	$10,962,000
■ Foxboro	$10,367,000	$54,000	$10,421,000
Convention Center (3)			
■ Boston/Cambridge	$45,544,000	$7,619,000	$53,163,000

Source: Coopers & Lybrand

(1) Approximately 65 percent or $32.8 million of the exhibition space related fiscal impact is incremental to the Commonwealth. The majority of the stadium/franchise portion of the fiscal impact currently exist within the Commonwealth as the Patriots currently make Massachusetts their home. Therefore, as long as the Patriots remain in Massachusetts these benefits will continue to accrue to the Commonwealth economy.

(2) As noted in footnote (1), the majority of the stadium/franchise fiscal impact currently exists within Commonwealth.

(3) The incremental fiscal impact related to the stand alone convention center is approximately 61 percent or $27.8 million.

- The state-wide fiscal impacts for a stadium only facility range from $10.3 million to $12.5 million, depending on the location and roof structure of the facility. Local impacts associated with the stadium only developments are minimal due to the tax structure of local communities within the Commonwealth.

- The economic and fiscal benefits presented in Exhibits ES-6 through ES-8 represent the *total* impacts associated with the various development projects. It should be noted that a portion of the total economic impact associated with each development option is already being generated within the state and local areas, particular by the John B. Hynes Convention Center and the Patriots NFL franchise.

- In reviewing the economic and fiscal impacts associated with the various development options, approximately 65 percent or $541 million of the total exhibition related output of the megaplex are assumed to be incremental. Approximately 61 percent or $458 million are incremental to the stand alone convention center project, and approximately 10 percent of the stadium and franchise related total output is estimated to be incremental.

- In addition to the impacts noted above, economic and fiscal benefits could be generated through collateral or ancillary development associated with any new facility construction. Further study would need to be undertaken to quantify the economic and fiscal impact generated from collateral development related to each project.

- This analysis is based on the assumption that all stadium and NFL franchise related expenditures currently take place within the Commonwealth, and does not include any benefits associated with a potential repositioning of the operating focus of the Hynes Convention Center.

- To the extent other economic impact generating markets could be penetrated with a repositioning of the Hynes, additional economic and fiscal benefit could be generated. Furthermore, if the Patriots were to leave Massachusetts, the economic impact currently generated from the franchise would be lost.

Financing Analysis

- A significant level of public funding is likely to be necessary for all four potential development options: the megaplex, convention center, open air and domed stadiums as private financing is highly unlikely in these economic conditions.

- The extent to which private funding can be secured through corporate sponsorship, equity, donations or debt financing would have an impact on the level of public sector commitment.

- Considering construction costs, capitalized interest and issuance costs, annual debt service payments for the various alternative projects are provided below:

Facility	Construction Fund (millions)	Capitalized Interest/ Issuance Costs (millions)	Annual Debt Service (millions)
Megaplex Facility (1)	$698	$155	$66
Open air stadium:			
Boston/Cambridge (1)	$340	$72	$39
Worcester	$339	$72	$39
Lynn	$250	$53	$29
Foxboro (2)	$81	$17	$9
Domed stadium:			
Boston/Cambridge (1)	$530	$112	$62
Worcester	$529	$112	$61
Lynn	$440	$93	$51
Convention Center (1)	$408	$58	$35

(1) Represents the high end cost associated with development on the Cambridge site versus development on the Boston-South Bay site. Construction fund and interest/issuance costs for megaplex development on the South Bay site are estimated at approximately $665 million and $149 million, respectively with annual debt service estimated at $63 million. Construction fund and interest/issuance costs for a stand alone convention center at the Boston - South Bay site are estimated at approximately $371 million and $53 million, respectively with annual debt service estimated at $32 million. Similarly, project costs estimates for stadium only development on the Boston - South Bay site are approximately 10 percent lower that the Cambridge project costs noted above.

(2) Represents renovation infrastructure and soft costs only and does not include costs associated with land acquisition or purchase of the existing stadium.

- Representatives of the existing stadium, Foxboro Stadium Associates (a private sector-entity), have indicated that the renovations proposed (approximately $50 million) for Foxboro Stadium would be financed privately, with the infrastructure costs being financed publicly. Private sector funding of the renovations is directly dependent upon securing a new or extended lease with the Patriots by satisfying their revenue requirements as well as providing sufficient return on the private sector renovation investment.

- Representatives of the New England Patriots have stated that they do not believe private financing is feasible or practical because of the need of the franchise to have lease arrangements and facilities which allow them to be competitive in the NFL. The extent to which the aforementioned requirements

can be met, or an acceptable lease negotiated, has not been analyzed as part of this study.

- If public sector funds are used to initiate Foxboro renovations, it is likely that the public sector would be required to purchase of the existing stadium in order to fund facility improvements. The cost associated with the land acquisition and the purchase of the stadium have not been evaluated as a part of this report. The costs of acquiring the property should be fully analyzed in determining the total costs of the Foxboro option.

- The facility estimates included herein assume that one hundred percent of the project costs are financed with taxable and/or tax-exempt bonds, and interest would be capitalized through the construction period for each project.

- Funding from private, public or quasi-public sources, avoidance of capitalized interest on debt and the use of variable rate financing, other bonding structures, or private equity contributions, could substantially reduce the required bonding size and annual debt service costs.

- Long term general obligation or state guaranteed debt possibly issued through selected public or quasi public authorities of the state would provide the strongest credit and lowest debt service.

- Given the economic and business climate in the Commonwealth, it is highly unlikely that any tax increase can be available for debt service.

- There are a variety of facility-related and other public/private revenues that can be dedicated to offset debt service on the bonds. Among the most promising are:

    - Sale of development rights;
    - Equity from a hotel developer;
    - Pension fund investment or credit enhancement of bonds;
    - Self-supporting project financing of a parking garage;
    - Federal funding assistance for transportation-related project elements or joint ventures with other Massachusetts Authorities;
    - Fees on visitors to Boston (car rental, airport taxi, etc.); and
    - Negotiating for a portion of incremental revenue with the football team.

- A megaplex can be financed entirely or almost entirely with lower cost tax exempt debt, while a stadium only project would require taxable bonding at approximately 2.5 percentage points higher interest cost.

- A convention center facility can be financed entirely with tax-exempt debt.

- Specific financing recommendations must await final decisions on the project's location, design, costs and detailed estimates of certain revenue streams that could contribute to debt service and operating expenses.

- Tax increases to fund any new facility construction are not considered economically or politically viable, given current economic conditions within the Commonwealth.

- In addition to the annual debt service, the operating results need to be considered in evaluating the total annual payment associated with the various project developments.

- Exhibit ES-9 through ES-11 provide a summary of operating shortfall/surplus and debt service (annual project cost) associated with the various options under the three lease scenarios presented in the financial analysis section.

- While it appears the development options analyzed will have difficulty covering their annual project costs and in some cases may incur operating shortfalls, many communities have considered similar projects as prudent public investments based on construction and operating employment, tax revenues from direct and indirect spending by those attending events at the facility, collateral and ancillary development in the vicinity of the project and the attraction of expanding businesses to the region.

Summary

The analysis of potential public assembly facility development within the Commonwealth has focused on a stadium only project (domed and/or open air), a stand alone convention/exhibition facility, and a megaplex project integrating convention/exhibition and enclosed fixed seating components. The analysis of these development scenarios has focused on the appropriate building size and program from a market perspective, the financial operating results of the project, project construction costs, the economic and fiscal benefits and annual total project costs.

Exhibit ES – 9

Massachusetts Stadium/Exhibition Facilities Analysis

Public Assembly Facility Development Analysis

Project Financing Summary – SCENARIO 1

	Facility Operating Shortfall / Surplus	Project Debt Service	Annual Debt and Operating Costs
Megaplex			
■ Boston/Cambridge	($8,766,000)	($65,844,000)	($74,610,000) (1)
Domed Stadium			
■ Boston/Cambridge	($3,323,000)	($61,354,000)	($64,677,000) (1)
■ Worcester	($3,323,000)	($61,276,000)	($64,599,000)
■ Lynn	($3,323,000)	($50,906,000)	($54,229,000)
Open Air Stadium			
■ Boston/Cambridge	($1,211,000)	($39,354,000)	($40,565,000) (1)
■ Worcester	($1,211,000)	($39,276,000)	($40,487,000)
■ Lynn	($1,211,000)	($28,906,000)	($30,117,000)
■ Foxboro	($1,211,000)	($9,346,000)	($10,557,000) (2)
Convention Center			
■ Boston/Cambridge	($8,388,000)	($35,119,000)	($43,507,000) (1)

Source: Coopers & Lybrand, Bear Stearns

(1) By excluding the parking costs and the associated event related revenues, the annual debt and operating costs would be reduced to $63,641,000, $54,324,000, $30,366,000 and $33,288,000 for the megaplex, domed stadium, open air stadium and convention center projects respectively.

(2) Includes project costs associated with the renovation of Foxboro only and does not include costs associated with land acquisition and the purchase of the existing stadium.

Exhibit ES – 10

Massachusetts Stadium/Exhibition Facilities Analysis
Public Assembly Facility Development Analysis
Project Financing Summary – SCENARIO 2

	Facility Operating Shortfall / Surplus	Project Debt Service	Annual Debt and Operating Costs
Megaplex			
■ Boston/Cambridge	($3,865,000)	($65,844,000)	($69,709,000) (1)
Domed Stadium			
■ Boston/Cambridge	$1,453,000	($61,354,000)	($59,901,000) (1)
■ Worcester	$512,000	($61,276,000)	($60,764,000)
■ Lynn	$757,000	($50,906,000)	($50,149,000)
Open Air Stadium			
■ Boston/Cambridge	$3,508,000	($39,354,000)	($35,846,000) (1)
■ Worcester	$2,573,000	($39,276,000)	($36,703,000)
■ Lynn	$2,818,000	($28,906,000)	($26,088,000)
■ Foxboro	$1,995,000	($9,346,000)	($7,351,000) (2)
Convention Center			
■ Boston/Cambridge	($8,388,000)	($35,119,000)	($43,507,000) (1)

Source: Coopers & Lybrand, Bear Stearns

(1) By excluding the parking costs and the associated event related revenues, the annual debt and operating costs would be reduced to $58,569,000, $49,377,000, $25,476,000 and $33,288,000 for the megaplex, domed stadium, open air stadium and convention center projects respectively.

(2) Includes project costs associated with the renovation of Foxboro only and does not include costs associated with land acquisition and the purchase of the existing stadium.

Exhibit ES – 11
Massachusetts Stadium/Exhibition Facilities Analysis
Public Assembly Facility Development Analysis
Project Financing Summary – SCENARIO 3

	Facility Operating Shortfall / Surplus	Project Debt Service	Annual Debt and Operating Costs
Megaplex			
■ Boston/Cambridge	$2,538,000	($65,844,000)	($63,306,000) (1)
Domed Stadium			
■ Boston/Cambridge	$7,731,000	($61,354,000)	($53,623,000) (1)
■ Worcester	$5,849,000	($61,276,000)	($55,427,000)
■ Lynn	$6,339,000	($50,906,000)	($44,567,000)
Open Air Stadium			
■ Boston/Cambridge	$9,729,000	($39,354,000)	($29,625,000) (1)
■ Worcester	$7,859,000	($39,276,000)	($31,417,000)
■ Lynn	$8,348,000	($28,906,000)	($20,558,000)
■ Foxboro	$6,702,000	($9,346,000)	($2,644,000) (2)
Convention Center			
■ Boston/Cambridge	($8,388,000)	($35,119,000)	($43,507,000) (1)

Source: Coopers & Lybrand, Bear Stearns

(1) By excluding the parking costs and the associated event related revenues, the annual debt and operating costs would be reduced to $51,995,000, $42,928,000, $19,084,000 and $33,288,000 for the megaplex, domed stadium, open air stadium and convention center projects respectively.

(2) Includes project costs associated with the renovation of Foxboro only and does not include costs associated with land acquisition and the purchase of the existing stadium.

In preparing this report, three primary facility development options have been analyzed.

1. Development of a megaplex.
2. Development of a stand alone convention center facility. *
3. Development of stadium only facilities including the renovation of the existing stadium at Foxboro. *

* Both the second and third options could be undertaken in combination.

A brief outline of these three primary facility development options follows.

Option 1

The development of a *megaplex*, integrating exhibition and enclosed fixed seating facilities, fully addresses the current and future potential convention and exhibition markets, while also addressing the stadium requirements of professional, collegiate and amateur football and other fixed seating events. While the *megaplex* development also represents the most costly option it also provides the greatest economic and fiscal benefit. A brief summary of the primary implications of *megaplex* development is presented below.

Project Development and Cost Issues

- Annual project costs associated with the development of a megaplex facility have been estimated at approximately $63.3 million to $74.6 million, depending on the specific facility lease agreement.

- The annual project costs associated with a megaplex are estimated at approximately $19.8 to $31.1 million greater than the costs associated with a stand alone convention center.

- However, in order to fully analyze the cost implications of the megaplex which provides both convention and stadium facilities, a comparison must be made with the combined costs of a stadium and a stand alone convention center.

- In analyzing *new* facility development, the project costs for a megaplex are similar or less than all combinations of stand alone convention center and stadium facility development options.

- Specifically, the total annual project cost estimates for the megaplex are approximately equal to, or up to 18 percent lower, than the combined costs for a stand alone convention center and a *new open air* stadium, depending upon the location of the stadium and the specific lease agreement.

- Annual megaplex costs range from approximately 31 to 38 percent lower than the combined costs for a stand alone convention center and a *new domed* stadium, or approximately $23.1 to $35.6 million less per annum.

- Total annual megaplex development costs have been estimated at $17 to $21 million per annum greater than the costs of constructing a stand alone convention center and *renovating* the existing *open air* stadium in Foxboro, depending on the specific lease scenarios presented in this report. This assumes there are no acquisition costs related to the stadium renovation.

- If public sector funds are used to initiate Foxboro renovations, it is likely that the public sector would be required to purchase the existing stadium. The cost associated with the land acquisition and the purchase of the stadium have not been evaluated as a part of this report. Additional analysis of the impact of the purchase on the overall costs of the Foxboro development option should be undertaken if public financing of the Foxboro option is to be considered further.

Economic and Fiscal Impact Issues

- In evaluating each potential development option, the megaplex generates the greatest level of economic and fiscal impact. The megaplex is estimated to generate over $1 billion in total output, $359 million in earnings annually, and support 13,300 retained or new jobs.

- The fiscal or tax benefits associated with the megaplex are estimated at over $63 million to the Commonwealth and approximately $8.5 million to the Boston area, for a total of $71.5 million annually.

- Discounting these fiscal impacts for the portion of the benefit currently being generated by the operations of the Hynes, *incremental* fiscal impacts are estimated to be approximately $32.8 million to the Commonwealth and $5.5 million to the Boston area, for a total of $38.3 million annually. These estimates do not include any incremental benefits which may be associated with a repositioning of the Hynes to focus on other event markets, and assume that the Patriots continue to make Massachusetts their home.

- A megaplex development could accommodate approximately 10 percent more convention and exhibition event potential as compared to a stand alone convention center, due to the increased level of exhibition space and the large plenary seating area associated with the stadium component of the project.
- As a result, the exhibition space component of megaplex operations could generate economic and fiscal impacts of approximately 10 percent greater as compared to a stand alone convention center. Quantified, this translates to approximately $81.5 million in total output and $4.9 million in annual fiscal benefits attributable to a megaplex which would not be generated by a stand alone convention center.

Other Considerations

- The development of a megaplex in Boston/Cambridge would provide the metropolitan area with both a new convention center and a new stadium in the downtown area.
- Such a development can offer the potential to compete for major national and international sports competitions and other such events including the NFL Super Bowl, NCAA final four and major political conventions.
- Based on the broad scope of the megaplex development option, the megaplex would likely provide the greatest collateral and ancillary development opportunities for the surrounding areas.
- A megaplex facility also offers potential operational efficiencies associated with newly constructed, combined facilities.
- A new stadium facility located in the Boston/Cambridge area could provide the public sector with a more favorable stadium lease than a renovated facility as the total operating revenues are estimated to be greater than in the other locations analyzed.

Option 2

The development of a *stand alone convention center* provides the facilities necessary to accommodate the majority of the Commonwealth convention and exhibition space demands. However, this development option does not address the stadium requirements of professional football and other fixed seating events including concerts, motor sports and various amateur sporting events.

Project Development and Cost Issues

- The total annual project costs associated with the stand alone convention center are estimated at $43.5 million.
- As the stand alone convention center development option does not address the stadium requirements, the development of a stadium may also need to be considered in order to accommodate the same market potential as available under the megaplex.
- The costs associated with the two separate developments (stand alone convention center and a *new* stadium) will be similar to or greater than the costs associated with the megaplex.
- The development of a new convention center combined with the renovation of the existing stadium in Foxboro will result in annual costs less than those associated with a megaplex; however, this development option involves a number of issues as outlined in the Option 3 summary.

Economic and Fiscal Impact Issues

- The economic and fiscal return related to the stand alone convention center is estimated at approximately $751 million total output, $271 million in earnings and 9,400 retained or created jobs.
- The incremental total output associated with the stand alone convention center is estimated at approximately $458 million. Incremental fiscal impacts are estimated at approximately $27.8 million to the Commonwealth, and approximately $4.6 million for the Boston metropolitan area for a total of $32.4 million.
- If a new convention center in conjunction with the renovation of Foxboro or the development of a new open air or domed stadium is considered, the total economic and fiscal return of the combined projects are estimated to be less than that of the megaplex.

Other Considerations

- The stand alone convention center provides the Commonwealth with the additional exhibition space necessary to accommodate the area market potential.

- The convention center development option would provide significant opportunities for collateral and ancillary development for the surrounding areas.

- Depending on the importance to the Commonwealth of addressing the stadium requirements of the Patriots, it may be necessary to consider some form of stadium development or renovation in conjunction with a new convention center. Not addressing the needs of the NFL Patriots could jeopardize their remaining in the Commonwealth.

Option 3

Based on an analysis of the *stadium only* development options, it is clear that in terms of a *stadium only* project, a renovation of the existing stadium in Foxboro represents the least costly development option. Although the construction costs presented for Foxboro represent facility renovation costs only and do not include capital costs associated with land acquisition or purchase of the existing stadium, it is likely that the combined costs would still be below that associated with the development of a *new stadium only* development, open air or domed. Furthermore, outside of Boston and Cambridge, only Worcester ranked higher than Foxboro in the site rankings for *stadium only* locations. For these reasons, we have focused on the renovation of Foxboro when considering the *stadium only* development option.

Project Development and Cost Issues

- Total annual project costs related to the renovation of Foxboro range between $2.6 and $10.6 million annually, substantially less than the annual costs for new stadium construction.

- The stadium only development option does not address the existing inability of existing convention and exhibition facilities within the Commonwealth to accommodate the current and long term market potential.

- The degree to which the renovation of Foxboro will meet the needs of the Patriots and can provide for expanded modern amenities has not been fully evaluated within the scope of this analysis.

- The Foxboro site does not have the potential for the superior accessibility as a public destination that Boston - South Bay can provide (interstate highway, mass transit and commuter rail) and to a lesser degree Worcester and Cambridge.

- The costs associated with the Foxboro renovation do not include land acquisition or purchase of the existing facility. In analyzing the other development options,

it has been assumed that the stadium and surrounding land would be owned by the funding authority. Proceeding with public sector funding of such a renovation project may be conditional on the purchase of the stadium by the Commonwealth or a public agency due to state constitutional limitations.

- Representatives of the existing stadium in Foxboro have indicated that the renovations proposed (approximately $50 million) would be financed privately, with the estimated infrastructure costs being financed publicly. The extent to which the privately financed renovation would address the facility and revenue requirements of the Patriots and the stadium operators has not been analyzed as a part of this study.

Economic and Fiscal Impact Issues

- The total economic impact supported by the renovated Foxboro stadium and NFL franchise is estimated at $147 million in total output, $49.3 million in earnings and 2,450 retained or created jobs.

- Ten percent of these impacts, or $14.7 million in total output, $4.9 million in earnings and 245 jobs are considered to be incremental. The remaining impacts are currently being generated by NFL franchise and stadium operations.

- The total fiscal benefits associated with the stadium/franchise are estimated at approximately $10.4 million. The incremental fiscal impact is estimated at approximately $1.0 million.

Other Considerations

- This development option could address the needs of an NFL franchise to secure continued presence in the Commonwealth at reduced costs when compared to a new stadium. However, the adequacy of such an option in providing the stadium amenities associated with a new stadium would have to be more closely analyzed.

- When comparing the megaplex to the stand alone convention center and renovation of Foxboro, a number of factors should be considered including:

    - The fact that the two facilities are not physically located together.

    - The ranking of Foxboro as a stadium site was significantly lower than the Boston - South Bay site.

- The renovated Foxboro stadium would continue to be open air as opposed to enclosed as would be the case with the megaplex.
- The annual costs associated with Foxboro represent only the renovation costs and do not include any land acquisition or the purchase of the existing facility, which may be a condition of funding.

* * * * * * * * * *

The details of the analysis summarized above highlight the construction, financing, economic impact and related issues associated with each potential development option. Ultimately, the development option which best serves the Commonwealth will be determined based upon the priorities and fiscal realities of the parties involved in the decision process.

The development of a megaplex facility fully addresses the current and future convention and sports stadium needs of the Commonwealth. In addition, megaplex development provides the highest return in terms of economic and fiscal impacts and opportunity for collateral and ancillary development. From a project cost perspective, a megaplex development, while costing more than other stand alone facility development options, requires less of a financial commitment as compared to the combination of stand alone convention center *and new* domed or open air stadium development.

If the priorities of the Commonwealth relate to accommodating long term convention demands, professional football franchise requirements and large scale sporting events which can not be accommodated by the New Boston Garden, such a megaplex development would be the most appropriate option.

The construction of a stand alone convention center provides significant economic and fiscal benefits at an annual cost less than that associated with the megaplex. However, under this development option, the facility requirements of the Patriots are unmet, potentially jeopardizing their continued presence within the Commonwealth. In addition, such a development would not offer the opportunity to compete for national and international sporting, political and other such non-recurring events.

Should a major objective of the Commonwealth be to maintain the presence of professional football, the renovation of the existing stadium in Foxboro could achieve the necessary facility conditions at the lowest annual cost. The potential for private

sector participation in funding the costs of renovation could reduce the annual public sector project costs. More detailed analysis of the proposed improvements to the existing stadium and their ability to meet the requirements of the Patriots should be undertaken if this option is pursued.

As outlined throughout this analysis, there are a number of issues which should be addressed as the decision making process moves forward. Some of the primary steps which should be considered are outlined below:

Market Related Steps

- Analyze potential alterative uses for the existing Hynes Convention Center. Such uses may include national/international conference and seminar activity, permanent exhibition events and other such functions.
- Further analyze the potential in the Boston metropolitan area for the leasing of stadium luxury suites and club seats. Assess the impacts of the leasing program of the New Boston Garden on any stadium facility development.
- Further analyze the potential for ancillary and collateral development associated with the project such as hotel, retail, entertainment and other such visitor industry facilities.
- Analyze how a new facility could interact with existing stadium, arena, convention and other such facilities. Such an analysis would prove useful as planning efforts to attract major national and international sporting and other events take place.
- Refine the financial operating analysis as more cost, sizing and other related details of the project are developed.
- Develop a more detailed project financing plan for the project as more cost, sizing and other related details are prepared.
- Analyze potential private and public management structures for the proposed development, as well as interactive management options for the other facilities within the metropolitan area.
- Further evaluate the lease options with the New England Patriots as related to stadium development options.

Architectural and Engineering Steps

- Develop site specific urban design guidelines that address: 1) the orientation and visual connection of the facility to the surrounding areas, 2) the location and massing of the structure and 3) physical connections including transit, auto and pedestrian.

- Develop pre-schematic facility configuration to provide a building footprint and massing requirement as well as primary entrances, exits and service access.

- Develop more detailed information on the infrastructure requirements and prepare concept plans for discussion with relevant agencies and authorities.

- Develop more detailed cost estimates for financing and development purposes.

- Prepare a facility development critical path schedule which accounts for all tasks including real estate acquisition, environmental permitting, engineering, design and construction.

- File an Environmental Notification Form for the preferred site with the Executive Office of Environmental Affairs and obtain a scope for the full scale environmental review of the project.

COMMONWEALTH OF MASSACHUSETTS

MEGAPLEX, CONVENTION CENTER, and STADIUM FEASIBILITY ANALYSIS

FINAL REPORT

VOLUME I

Market, Operating, Economic Impact and Financing Analysis

February 5, 1993

Volume I

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1. Market Trends & Resources

The public assembly industry is comprised of a diverse set of specific markets, each operating with different motivations, facility requirements and impacts on local areas. The scope of this engagement includes an assessment of the market demand for both exhibition space as well as the event demand for a professional sports stadium facility. When evaluating a host community or facility for an event, associations, meeting planners and event promoters consider a number of market resources. This section provides an overview of the key market resources available in Massachusetts as well as an analysis of how these resources compare to other competitive and/or comparable communities. This section also provides a general description of the tradeshow and convention market and its growth prospects. This information will help form the basis for our assessment of the future exhibition and fixed seating event market potential in Massachusetts.

The specific sections discussed are as follows:

1.1 Primary Market Segments
1.2 Market Trends and Characteristics
1.3 Comparable/Competitive Facilities
1.4 Historical Boston Area Event Utilization

1.1 Primary Market Segments

An overview and description of the primary market segments focused on as part of this analysis are presented below.

1.11 Exhibition Space Event Segment

The market potential for exhibition space is derived from a variety of demand segments. Each of these market segments has unique characteristics in terms of usage patterns, seasonality and utilization. In evaluating the potential for the construction of new or expanded convention facilities, there are three types of users that represent the major segments of the market: trade shows, conventions and public shows. These segments are defined as follows.

Trade Shows

Trade shows are exhibitions for professionals from specific industries or technologies. The purpose of trade shows is to display current products, processes or services for the given industry. Trade shows are sponsored and produced by trade or technical associations or by professional trade show management organizations. They are frequently, but not invariably, accompanied by conventions, meetings and seminars. The industry is represented by the National Association of Exposition Managers, whose members produce the large majority of all major trade shows in the United States.

Conventions

The convention industry is a major industry in the United States and constitutes a major source of income for destination cities, airline carriers, hotels and other related industries. Conventions generally consist of privately held meetings of professional groups and associations for action on matters of common concern. These meetings are attended by association members and/or affiliations wishing to share ideas. A convention can consist of a single meeting or a number of concurrent meetings throughout the event period. National conventions typically have a large number of out-of-state delegates. The proliferation of trade and professional groups has contributed greatly to the growing convention market.

Conventions and trade shows have become more homogeneous over the past several years. In the past, conventions used very little exhibit space in conjunction with their meetings, while trade shows used very few meeting rooms during the course of the event. Now, however, many association planners have included displays and exhibits of products and processes as part of their conventions and many trade show producers are using meeting rooms to hold in-depth demonstrations and seminars in conjunction with their events. Trade show and convention activity can be a significant generator of economic impact for the host community.

Within both of the market segments outlined above, there are a variety of event rotational or geographical patterns. These patterns determine the level in which a particular facility will compete within a market segment. These geographical classifications are as follows:

- International - Exhibitors and attendees are drawn from all geographical regions throughout the world.

- National - Exhibitors and attendees are drawn from all geographical regions within the United States.

- Regional - Exhibits, shows or conventions are held for a specific geographical region within the United States (Northwest, Midwest, Pacific, etc.) and tend to draw attendees from two or more states within that region.

- State - Exhibits, shows or conventions are held in a city where exhibitors and attendees are primarily from within the state.

- Local - Exhibits, shows or conventions are held in a city where exhibitors and attendees are primarily from within the local area.

Public Shows

Public shows are special interest consumer oriented events which are designed to attract the general public and typically charge admission. Depending upon the size, location and type of merchandise being sold, attendance at public (consumer) shows is usually drawn from the local area. The expenditures made by these attendees, therefore, reflect a redistribution of existing dollars. Examples of public shows are boat shows, car shows, and home and garden shows.

In addition to the market segments described above, the following market segments constitute potential users of the facility; however, we have not performed a detailed analysis of these segments in this report due to the specificity of their market, the global nature of the market (i.e., the World's Fair) and their varying and inconsistent levels of utilization and facility requirement characteristics.

Formal Corporate/Association Meetings: These events consist of gatherings of individuals organized under a corporate or association entity and are generally smaller and more specific in their purpose than a convention.

World Exhibitions: Large international exhibitions which represent many countries and sectors of industry are typically once-only events. Examples include the World's Fair in Knoxville and New Orleans, and Expo Montreal.

Merchandise Marts/Trade Marts: Permanent exhibitions held in a building specifically designed to bring together sellers and buyers in selected industry categories. Merchandise marts are usually owned and managed by private companies. Examples include Dallas Market Center and Infomart.

Other Events: In addition to the market segments noted above, a facility's design characteristics may allow other events to be significant users of a convention center. These events include graduations, lectures, religious and other large assemblies, concerts, sporting events, family shows, and other such events.

Other Definitions

- Net Square Footage: Net square footage is the actual amount of space required for exhibits at conventions, trade shows and public shows. Exhibitors and event planners typically express their exhibit space requirements in terms of net square feet.

- Gross Square Footage: Gross square footage includes the net amount of space required for exhibits plus circulation space such as aisles and public areas. While a good rule of thumb is that net space totals 50 percent of gross space (i.e., a 50,000 net square foot show requires 100,000 gross square feet of exhibit hall space), it is important to be aware of frequent variations. For example, a 40,000 net square foot show in a 100,000 square foot exhibit hall can, in fact, require use of the total facility.

1.12 Stadium Event Segment

The major function of a stadium is to provide the facilities necessary for professional sporting events, primarily football and baseball. In many cases, however, a stadium can play an important role in servicing a variety of other event markets, including concerts, motor sports, amateur sports and other such events. In recent years, several cities have analyzed or approved the construction of joint football stadium/convention center projects. These types of

developments allow for the more complete use of the stadium facility as exhibition space for larger trade events.

The domed facilities generally house a greater level of other events relative to the open-air stadiums. This is due primarily to the fact that domed facilities provide a regulated environment and a better configuration for most other events. In addition, other event usage is generally discouraged at natural grass open-air facilities due to the potential for field damage. The specific level of other event activity is generally a function of both local population and spending levels and the number of other facilities within a region competing for events.

1.2 Market Trends and Characteristics

Within this section, we present the trends and characteristics of both the exhibition space and the fixed seating event markets.

1.21 Exhibition Space Market Trends

Convention and trade show events continue to be an effective means of promoting products and services. Data from The Meetings Market '92 published by Meetings & Conventions indicated that over 225,000 major conventions and association meetings were held in 1991. Total attendance at these events exceeded 31 million, with nearly 7 million spouses in attendance. According to Meetings & Conventions, over $26 billion in direct spending was attributable to these major conventions and association meetings.

However, beginning in 1989-1990, growth in the convention and trade show industry slowed largely due to nation-wide recession and the Gulf War. The effects of the recession are expected to continue for a period of time, while the impacts generated by the War were short lived. Most industry projections indicate continued steady growth over the next 5 to 10 years. Although these are national trends, they provide an indication to how potential convention and trade show business might be affected on a local basis.

According to Meetings & Conventions, of the major conventions held, over 72 percent involve exhibits. Of those convention events which include exhibits, approximately 55 percent required over 10,000 net square feet of exhibit space. Such events represent the primary market for convention and trade show facilities. As noted earlier, net square feet relates only to the actual space occupied by exhibits. Gross square feet relates to the total space required within an exhibit hall including aisles and circulation space.

The availability of suitable hotels, ease of transporting attendees and transportation costs are rated the most important factors by planners in selecting event destinations. Other factors cited are quality of facilities, delegate appeal and area climate. Without accommodating these destination selection criteria, the ability of a facility to compete for events is severely limited. Exhibit 1.2-1 outlines the most significant factors in selecting a meeting or convention destination.

As the summary of selection criteria outlined below suggests, event planners have become increasingly demanding as to the availability and quality of facility and amenities provided. As communities compete to capture increasing event market share and the associated economic impacts, the national inventory of quality facilities and amenities has also risen.

Exhibit 1.2-1

Factors Considered Important in the Selection of a Meeting/Convention Destination

	Association Planners	Convention Planners
Availability of hotels & meeting facilities	1	1
Ease of transporting attendees to location	2	2
Transportation costs	4	3
Distance from individual attendees	3	4
Climate	5	5
Availability of recreational facilities	6 (1)	6
Sightseeing, cultural, & other attractions	6 (1)	7
Mandated by by-laws	6 (1)	8
Glamorous or popular image of location	9	9

(1) Tied for 6th

Source: The Meetings Market 1992, conducted by Market Probe International, Inc.

1.22 Fixed Seating Event Market Trends

The primary tenant of a stadium facility is generally a professional sports team or teams. The fixed schedules of professional sports provides constant facility utilization in terms of events. The attendance levels at professional sports events have generally increased slightly over the past several years, with variations

within each specific market. These variations are a result of local economic and population conditions as well as the performance of the local sports team.

The trends and characteristics of the non-sporting fixed seating event market are determined primarily by the demographic and socio-economic characteristics of the local area. Concerts, motor sports, family shows and other fixed seating promoters will focus on these conditions, as well as the particular facility rental and promotional agreements, when making destination decisions. Within each of the primary seating event types, there are a number of common trends as outlined below:

> **Concerts** - Increasingly, the only concert events held in stadium venues are the multi-headliner productions, with the exceptions of popular productions such as Guns 'n' Roses, U2 and the Grateful Dead. Typical stadium utilization from these event types can range from 1 show annually, up to 4 or 5, depending on the geographic location of the facility, and the number of shows an act will produce as part of a tour stop.
>
> **Other Events** - Other events incorporate a wide variety of attractions including motor sports, religious festivals, trade events, local private and public functions, consumer shows and other events which generally draw a high percentage of their attendance from the local area. The level of such other events has remained fairly constant in most markets throughout the country. Specific or unique local economic/population changes as well as the inventory of competitive venues can impact event levels within a particular venue.

In summary, the primary tenant of a stadium is generally a professional football and/or baseball team. Facility utilization from these sources has remained largely constant throughout the country. The non-sports fixed seating market consists of a diverse set of events drawing attendance from the local area. This market has continued to provide event utilization for most professional sports stadiums throughout the country.

1.3 Comparable/Competitive Facilities

As part of the review of comparable/competitive facilities, we have focused on both convention and trade show venues, as well as professional sports stadiums. Each of these facility types are reviewed below.

1.31 Convention and Trade Show Venues

A total of 12 facilities were analyzed and included in this review, with the existing Hynes Convention Center, Bayside Expo Center and the World Trade Center presented for comparison purposes. The facilities identified in this report were deemed to present some level of competition or comparability to venues within the Commonwealth due to factors such as location or size of the metropolitan area. The facilities and cities analyzed include:

- Atlantic City Convention Center, Atlantic City, New Jersey;
- Georgia World Congress Center, Atlanta, Georgia;
- Baltimore Convention Center, Baltimore, Maryland;
- Cobo Conference/Exhibition Center, Detroit, Michigan;
- Indiana Convention Center, Indianapolis, Indiana;
- Javits Convention Center, New York, New York;
- Rosemont Exposition Center, Rosemont (Chicago), Illinois;
- Rhode Island Convention Center, Providence, Rhode Island;
- Columbus Convention Center, Columbus, Ohio;
- Philadelphia Convention Center, Philadelphia, Pennsylvania;
- Lawrence Convention Center, Pittsburgh, Pennsylvania; and
- Washington Convention Center, Washington D.C.

We have identified specific resources that event organizers consider when choosing a particular facility and/or destination, and have evaluated each in the aforementioned cities. The resources evaluated include:

- Exhibit space;
- Meeting and ballroom space; and
- Accessibility.

These factors are discussed in greater detail below. In addition, historical geographic distribution of convention activity throughout the country is summarized.

Exhibit Space

One of the primary characteristics which defines a trade show and convention facility and the market in which that facility competes is the

amount of available exhibition space. In reviewing exhibition space levels, there is a distinction between prime and total exhibition space relating to the exact purpose of the space. Prime refers only to space dedicated solely to exhibitions, while total refers to all building space which could potentially be used for exhibits.

Exhibit 1.3-1 outlines the facilities surveyed by estimated prime and total exhibit space. The amount of prime exhibit space of the facilities surveyed ranges from 100,000 square feet at the Rhode Island Convention Center, currently under construction in Providence, to 950,000 square feet at the Georgia World Congress Center in Atlanta. Total exhibit space at these facilities range from 100,000 square feet at the Rhode Island Convention Center, to 1,180,000 square feet at the Georgia World Congress Center. The existing Hynes Convention Center contains 193,000 square feet of exhibition space. The Bayside Expo Center contains 240,000 square feet of prime space, with the World Trade Center providing 120,000 square feet of prime space.

Meeting And Ballroom Space

The importance of providing sufficient state-of-the-art meeting and ballroom space cannot be underestimated. Event organizers have increasingly placed a premium on such space in selecting trade show and convention centers for their event.

Exhibit 1.3-2 provides a comparison of the number and total gross square footage of meeting and ballrooms in the comparable and/or competitive facilities. Available meeting and ballroom space for the facilities surveyed ranged from approximately 17,000 square feet in 18 meeting rooms at the Rhode Island Convention Center to over 200,000 square feet in 70 meeting rooms at the Georgia World Congress Center in Atlanta.

The number and square footage of ballrooms are also presented in Exhibit 1.3-2 for the competitive/comparable facilities surveyed. All of the twelve facilities surveyed have a ballroom. The square footage of these ballrooms range from 20,000 square feet at both the Rosemont and Rhode Island Convention Centers to 54,400 square feet at the Indiana Convention Center. The Hynes Convention Center currently contains approximately 68,200 square feet of meeting, and 25,000 square feet of ballroom space.

EXHIBIT 1.3 – 1
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
COMPARISON OF FACILITY EXHIBIT SPACE

CITY/FACILITY	PRIME GROSS EXHIBIT SPACE	TOTAL GROSS EXHIBIT SPACE
Atlanta\Georgia World Congress Center	950,000	1,180,000
New York\Javits Convention Center	760,000	900,000
Detroit\Cobo Conference\Exhibition Center	700,000	800,000
Chicago\Rosemont Exposition Center	350,000	600,000
Philadelphia\Convention Center (1)	317,000	440,100
Atlantic City\Convention Center (2)	350,000	436,000
Washington D.C.\Convention Center (3)	250,000	381,000
Columbus\Convention Center (1)	306,000	338,000
Indianapolis\Convention Center	205,000	301,000
Boston\Bayside Expo Center	240,000	250,000
Boston\Hynes Convention Center	193,000	193,000
Pittsburgh\Lawrence Convention Center	131,000	165,000
Baltimore\Convention Center	120,000	145,000
Boston\World Trade Center	120,000	132,000
Providence\Rhode Island Convention Center (1)	100,000	100,000

(1) Under construction / renovation.
(2) The new Atlantic City Convention Center will have approximately 486,000 square feet of prime gross exhibition space.
(3) Considering new facility construction.

Source: Facility Management

EXHIBIT 1.3–2
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
COMPARISON OF FACILITY MEETING AND BALLROOM SPACE

City\Facility	Number of Meeting Rooms	Meeting Room Gross Square Footage	Number of Ballrooms	Ballroom Gross Square Footage	Combined Gross Square Footage
Atlanta\Georgia World Congress Center	70	200,000	1	33,000	233,000
Detroit\Cobo Conference\Exhibition Center	84	168,000	2	46,000	214,000
New York\Javits Convention Center	100	90,000	1	40,000	130,000
Indianapolis\Indiana Convention Center	52	75,000	1	54,400 (1)	129,400
Philadelphia\Convention Center	41	88,000	1	31,000	119,000
Baltimore\Convention Center	23	54,006	1	52,296	106,302
Atlantic City\Convention Center	30	78,150	1	23,000	101,150
Washington D.C.\Convention Center	37	70,000	1	26,600	96,600
Boston\Hynes Convention Center	37	68,200	1	25,000	93,200
Columbus\Convention Center	31	45,000	1	39,400 (2)	84,400
Pittsburgh\Lawrence Convention Center	25	42,000	1 (3)	28,000	70,000
Boston\World Trade Center	28	45,000	3	18,000	63,000
Chicago\Rosemont Exposition Center	15	28,000	1	20,000	48,000
Boston\Bayside Expo Center	8	20,000	0	0	20,000
Providence\Rhode Island Convention Center	18	17,000	1	20,000	37,000

N/A = Not Available

(1) An additional 35,000 square foot ballroom is under construction.

(2) An additional 25,000 square foot ballroom is under construction.

(3) The 28,000 square foot exhibition hall may be used for ballroom space.

Source: Facility Management & 1992 AudArena Stadium Guide

Accessibility

According to many state, regional and national meeting planners, and as illustrated in Exhibit 1.2-1, a city's accessibility for delegates and exhibitors, particularly via commercial airlines, is a key determinant of the ability of a community to host their events.

As a measure of the relative air access, the level of direct flight service from other domestic and foreign cities is a primary consideration. Exhibit 1.3-3 provides a summary of air service into Massachusetts and the comparable and/or competitive cities. As of November, 1992, Boston could be accessed directly by 91 domestic and 13 international cities. This is in the lower half of the comparable cities surveyed, however it is sufficient to service all major convention and trade show activity.

Locational Patterns

Exhibit 1.3-4 provides an historical summary of geographic preferences of major convention organizers. Many different factors are considered when deciding where to hold conventions. As shown on Exhibit 1.3-4, the largest percentage of conventions are held in the South Atlantic. This geographic region has a warm climate, which is a primary characteristic considered by meeting planners. The geographic location of New England has historically not attracted a significant level of convention/ trade show activity. This has traditionally been influenced by such factors as weather, costs and geographic location. Other important site selection characteristics have historically included cost, entertainment, and the number of members in the region.

1.32 Professional Sports Stadiums

As part of the comparable facilities analysis, all 27 existing professional football stadiums were analyzed and included in this review, with the existing Foxboro Stadium highlighted for comparison purposes. Seven of the stadiums are domed, while the remaining twenty facilities are open-air stadiums.

Within this comparative analysis, we focused on three primary facility characteristics as outlined below.

- General seating capacity;
- Private suites; and
- Club seats.

These factors are discussed in greater detail on the following pages.

EXHIBIT 1.3–3
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
COMPARISON OF AIR SERVICE

CITY	NUMBER OF DOMESTIC CITIES WITH DIRECT FLIGHTS	NUMBER OF FOREIGN CITIES WITH DIRECT FLIGHTS	TOTAL CITIES
Chicago	134	18	152
New York	122	30	152
Atlanta	134	15	149
Washington	128	10	138
Pittsburgh	119	6	125
Philadelphia	106	13	119
Detroit	105	9	114
Baltimore	100	9	109
Boston	91	13	104
Indianapolis	73	4	77
Columbus	54	0	54
Providence	39	0	39
Atlantic City	7	0	7

Source: Official Airline Guide, October – November 1992

EXHIBIT 1.3–4
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
LOCATION OF LAST MAJOR CONVENTION

Geographic Areas	States Included	Percent of Market
South Atlantic	DE, DC, FL, GA, MD, NC, SC, VA, WV	23%
Pacific	AK, CA, HI, OR, WA	15%
West South Central	AR, LA, OK, TX	12%
East North Central	IL, IN, MI, OH, WI	11%
Middle Atlantic	NJ, NY, PA	8%
Mountain	AZ, CO, ID, MT, NV, NM, UT, WY	7%
Outside United States		7%
New England	CT, ME, MA, NH, RI, VT	6%
East South Central	AL, KY, MS, TN	6%
West North Central	IA, KS, MN, MO, NE, ND, SD	5%

Source: The Meetings Market 1992

General Seating Capacity

The capacity of a stadium is one of the primary determinants of the types of events which can be accommodated. The capacity level of a stadium restricts or allows for different types of events. A stadium with a small capacity (under 60,000), has a limited chance of hosting premier events, such as the Super Bowl. However, the larger stadiums have a reduced likelihood of capturing smaller touring concerts, which favor more intimate surroundings.

Exhibit 1.3-5 outlines the capacity and average attendance level for the past four years for each NFL stadium. The capacities range from 92,456 at the Los Angeles Memorial Coliseum in Los Angeles, to 55,750 at the RFK Stadium, in Washington, D.C. The highest attendance level as a percentage of capacity was recorded at Veterans Stadium, in Philadelphia, Pennsylvania, while the lowest attendance level percentage is at Sun Devil Stadium, in Tempe, Arizona. The league average capacity is approximately 69,000, with an attendance capacity of approximately 90 percent.

Private Suites

Beginning with the development of Joe Robbie Stadium in Miami, private suites have come to represent a significant source of revenue for a number of stadiums and sports teams. Private suites currently exist in all of the stadiums with the exception of the Los Angeles Memorial Coliseum and the existing RFK Stadium, as outlined in Exhibit 1.3-6.

The price of these suites range significantly at the various stadiums. Veterans Stadium in Philadelphia receives a high end annual suite premium of $175,000, while suites at Rich Stadium lease for as low as $12,500 annually. The price of the suites can include tickets in any combination of the National Football League, Major League Baseball, college, other events or may not include tickets at all.

Club Seats

Club seats are relatively new to professional sports arenas and stadiums. Like private suites, club seats have also come to represent a substantial source of revenue. These seats are typically found in the best locations in the stadium and generally offer extra amenities such as exclusive lounge areas, cocktail waiter/waitress service, and more comfortable seats.

EXHIBIT 1.3–5

MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
NFL HISTORICAL REGULAR SEASON PAID ATTENDANCE
1988–1989 THROUGH 1991–1992 SEASONS

			1991–1992			1990–1991			1989–1990			1988–1989	
TEAM	FACILITY	CAPACITY	% OF CAP.	AVG. ATT.	% CHG	% OF CAP.	AVG. ATT.	% CHG	% OF CAP.	AVG. ATT.	% CHG	% OF CAP.	AVG. ATT.
Philadelphia Eagles	Veterans Stadium	63,358	103.33%	65,469	–0%	103.66%	65,678	–0%	103.67%	65,686	1%	103.06%	65,297
San Francisco 49ers	Candlestick Park	64,252	101.70%	65,345	–0%	101.75%	65,377	2%	99.58%	63,982	1%	98.87%	63,523
Houston Oilers	Astrodome	61,000	101.07%	61,650	5%	96.56%	58,903	2%	94.36%	57,557	22%	77.65%	47,369
Pittsburgh Steelers	Three Rivers Stadium	59,000	100.07%	59,044	–0%	100.27%	59,161	0%	99.79%	58,877	–0%	99.87%	58,925
New York Giants	Giant Stadium	76,891	99.00%	76,119	0%	98.87%	76,019	0%	98.78%	75,951	–0%	98.78%	75,956
Chicago Bears	Soldier Field	66,949	98.81%	66,153	0%	98.68%	66,067	0%	98.62%	66,028	–0%	98.66%	66,053
Buffalo Bills	Rich Stadium	80,290	98.36%	78,973	2%	96.76%	77,691	–1%	97.52%	78,300	–1%	98.36%	78,977
Washington Redskins	RFK Memorial Stadium	55,750	98.10%	54,692	–0%	98.17%	54,732	0%	98.12%	54,703	0%	98.12%	54,700
New York Jets	Giant Stadium	76,891	97.91%	75,282	–0%	98.13%	75,456	0%	98.11%	75,440	–1%	98.68%	75,879
Kansas City Chiefs	Arrowhead Stadium	78,067	97.81%	76,356	6%	92.70%	72,370	17%	79.16%	61,797	11%	71.27%	55,641
Denver Broncos	Mile High Stadium	76,273	97.56%	74,410	–1%	98.13%	74,846	–0%	98.16%	74,866	–0%	98.63%	75,229
Seattle Seahawks	Kingdome	64,964	97.53%	63,358	–0%	97.54%	63,363	–0%	97.93%	63,620	0%	97.79%	63,531
Cincinnati Bengals	Riverfront Stadium	59,756	97.31%	58,151	–0%	97.46%	58,238	–0%	97.49%	58,255	0%	97.20%	58,085
New Orleans Saints	Superdome	69,573	97.15%	67,593	2%	94.99%	66,084	–1%	95.87%	66,701	–2%	97.96%	68,151
Minnesota Vikings	Metrodome	63,000	96.97%	61,089	–1%	98.17%	61,850	1%	97.53%	61,445	–0%	98.02%	61,750
Dallas Cowboys	Texas Stadium	63,856	96.54%	61,647	6%	91.27%	58,281	9%	83.89%	53,571	7%	78.50%	50,130
Atlanta Falcons	Fulton County Stadium	59,643	92.14%	54,954	1%	91.11%	54,341	16%	78.72%	46,949	18%	66.56%	39,699
Green Bay Packers	Lambeau Field	57,063	91.60%	52,271	–9%	100.63%	57,424	3%	98.06%	55,958	1%	96.84%	55,258
Cleveland Browns	Cleveland Municipal Stadium	80,049	89.90%	71,964	–1%	91.04%	72,874	–7%	97.63%	78,155	0%	97.46%	78,019
Indianapolis Colts	Hoosier Dome	60,127	86.45%	51,978	–6%	92.46%	55,591	–6%	98.13%	59,004	1%	96.75%	58,171
Los Angeles Rams	Anaheim Stadium	69,008	83.80%	57,827	–9%	92.37%	63,745	2%	90.52%	62,467	7%	84.83%	58,537
Miami Dolphins	Joe Robbie Stadium	75,000	83.27%	62,452	–4%	87.16%	65,368	8%	80.71%	60,536	–8%	87.75%	65,812
San Diego Chargers	Jack Murphy Stadium	60,750	80.78%	49,075	–1%	81.81%	49,702	3%	79.68%	48,405	–1%	80.40%	48,840
Detroit Lions	Pontiac Silverdome	80,500	78.43%	63,139	–6%	83.81%	67,464	29%	64.74%	52,113	24%	52.01%	41,871
Tampa Bay Buccaneers	Tampa Stadium	74,314	67.54%	50,188	–18%	81.94%	60,896	3%	79.44%	59,037	10%	72.10%	53,582
New England Patriots	Foxboro Stadium	60,794	67.49%	41,031	5%	64.50%	39,211	–16%	76.83%	46,709	–15%	90.38%	54,945
Los Angeles Raiders	Los Angeles Coliseum	92,456	65.95%	60,979	6%	62.07%	57,391	14%	54.68%	50,554	–7%	58.81%	54,375
Phoenix Cardinals	Sun Devil Stadium	72,000	61.10%	43,995	–6%	65.09%	46,864	1%	64.64%	46,544	–27%	89.13%	64,173
NFL AVERAGE		68,628	89.78%	61,614	–1%	90.81%	62,321	2%	88.64%	60,829	1%	88.08%	60,446

Source: NFL offices, stadium management, industry periodicals.

EXHIBIT 1.3–6
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
NATIONAL FOOTBALL LEAGUE STADIUMS
RANKED BY TOTAL NUMBER OF PRIVATE SUITES

TEAM	FACILITY	YEAR BUILT	NUMBER OF SUITES	PRICE PER YEAR PER SUITE	TICKETS INCLUDED	% LEASED
Dallas Cowboys	Texas Stadium	1971	295 (1)	$25,000 – $100,000	NFL	95%
Miami Dolphins	Joe Robbie Stadium	1987	215	$ 29,000 – $65,000	NONE	65%
Atlanta Falcons	Georgia Dome	1992	203	$20,000 – $120,000	NFL	100% (2)
Philadelphia Eagles	Veterans Stadium	1971	141 (4)	$50,000 – $175,000	NFL & MLB & TEMPLE U.	90%
New Orleans Saints	Louisiana Superdome	1975	132	$18,000 – $40,000	NONE	100%
Houston Oilers	Astrodome	1965	110	$20,000 – $45,000	NFL	95%
Chicago Bears	Soldier Field	1924	116	$60,000 – $75,000	NFL	100%
Minnesota Vikings	Metrodome	1982	115	$48,000 – $61,000	NFL	57%
Los Angeles Rams	Anaheim Stadium	1966	108	$24,000 – $40,000	NFL & MLB	95%
Green Bay Packers	Lambeau Field	1957	102	$15,000 – $20,000	NONE	100%
Cleveland Browns	Municipal Stadium	1931	108	$43,000 – $59,000	NFL & MLB	100%
Pittsburgh Steelers	Three Rivers Stadium	1970	115	$50,000	NFL & MLB	100%
Detroit Lions	Pontiac Silverdome	1975	102	$27,600	NONE	54%
Indianapolis Colts	Hoosier Dome	1983	96	$15,000 – $36,000	NONE	100%
San Francisco 49'ers	Candlestick Park	1960	81	$30,000 – $73,000	NFL	95%
Kansas City Chiefs	Arrowhead Stadium	1972	80	$17,000 – $51,000	NONE	N/A
San Diego Chargers	Jack Murphy Stadium	1967	79	$25,000 – $50,000	NFL	N/A
New York Giants/Jets	Giants Stadium	1976	72	$106,000	NONE	100%
Denver Broncos	Mile High Stadium	1948	58	$50,000 – $88,000	NFL	80%
Phoenix Cardinals	Sun Devil Stadium	1958	60	$52,000	NONE	88%
Tampa Bay Buccaneers	Tampa Stadium	1967	57	$43,000 – $80,000	NFL	N/A
Seattle Seahawks	Seattle Kingdome	1976	48	$50,000 – $80,000	NFL & MLB	80%
Buffalo Bills	Rich Stadium	1973	50	$12,500 – $32,000	NONE	100%
New England Patriots	Foxboro Stadium	1971	42	$33,000 – $125,000	NFL	N/A
Cincinnati Bengals	Riverfront Stadium	1970	20	$25,000	NONE	100%
Los Angeles Raiders	Memorial Coliseum	1923	0	N/A	N/A	N/A
Washington Redskins	RFK Stadium	1961	0	N/A	N/A	N/A

N/A = Not Available

NAP = Not applicable

(1) 225 private suites were sold outright, 70 are available for lease.

(2) Facility management represents that signed commitments and deposits have been obtained for 100% of these suites. The deposit is composed of the first and last years rent payment.

(3) Plans currently exist to install 150 private suites in the L.A. Memorial Coliseum. This represents a reduction from the original plan of 200 suites.

(4) 89 of the suites are controlled by the Eagles and 52 are controlled by the Phillies.

Source: NFL Offices, Stadium Management and Industry Periodicals, November 1992.

As outlined in Exhibit 1.3-7, the number of club seats range from a high of nearly 9,300 at Joe Robbie Stadium in Miami, to 1,600 club seats at Mile High Stadium in Denver. The annual prices for club seats also have different ranges at the various venues, with a high of $2,000 at Sun Devil Stadium in Tempe, Arizona, down to $350 at both Rich Stadium and the Astrodome.

1.4 Historical Boston Area Event Utilization

Currently, the major national and regional convention and trade show activity conducted within the State takes place in the Boston area. The remainder of this section presents an historical summary of the types and quantity of events held at the Hynes Convention Center, the World Trade Center and the Bayside Expo Center.

As outlined in Exhibit 1.4-1, the primary event categories generating exhibition space usage include conventions, trade shows, public shows and large meeting functions. In analyzing Exhibit 1.4-1, there is a clear distinction in the types of events being attracted to the various Boston area venues. The Hynes has historically accommodated conventions and trade events, placing little emphasis on the public show sector. In focusing on this market, the Hynes serves as the primary generator of convention and trade event economic impact. Conversely, the Bayside generates a significant segment of its business from public shows which account for comparatively very little in terms of community-wide economic impact, but can provide a high level of operating revenue.

A detailed breakdown of the convention and trade events accommodated by area venues for the years 1990 through 1992 is presented below. This data is based on event list information supplied by the facility representatives, and by the Greater Boston Convention and Visitors Bureau, Inc.

Exhibit 1.4-2

Massachusetts Stadium / Exhibition Facilities Analysis
Existing Boston Exposition Facilities
Three Year Event List Analysis

Year	Hynes Convention Center	Bayside Expo Center	World Trade Center
1990	38	3	3
1991	32	4	3
1992	37	4	8
3 Year Total	107	11	14
Percentage of Market	81%	8%	11%

EXHIBIT 1.3–7
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
NATIONAL FOOTBALL LEAGUE STADIUMS
RANKED BY TOTAL NUMBER OF CLUB SEATS

TEAM	FACILITY	YEAR BUILT	NUMBER OF CLUB SEATS	ESTIMATED PRICE PER YEAR	TICKETS INCLUDED	% LEASED
Miami Dolphins	Joe Robbie Stadium	1987	9,279	$800 – $1,400	NFL	85%
Houston Oilers	Astrodome	1965	8,000	$350	NFL	90%
Buffalo Bills	Rich Stadium	1973	6,878	$350	NFL	100%
Atlanta Falcons	Georgia Dome	1992	6,300	$1,000 – $1,800	NFL	76% (1)
Phoenix Cardinals	Sun Devil Stadium	1958	5,000	$600 – $2,000	NFL	70%
Kansas City Chiefs	Arrowhead Stadium	1972	2,000	$435	NFL	100%
Green Bay Packers	Lambeau Field	1957	1,920	$480 (2)	NFL	100%
Denver Broncos	Mile High Stadium	1948	1,606	$1,450	NFL	90%

N/A = Not Available

(1) Facility management represents that signed commitments and deposits have been obtained for 76% of the club seats. The deposit is composed of the first and last years rent payment.

(2) The Packers play 6 home games at Lambeau Field.

Source: NFL Team Offices, Stadium Management, and Industry Periodicals. November 1992

EXHIBIT 1.4–1
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
EXISTING BOSTON EXPOSITION FACILITIES
1992 EVENT LIST SUMMARY

Events	Hynes Convention Center	Bayside Expo Center	World Trade Center	Total
Conventions & Tradeshows:				
International	5	2	1	8
National Conventions	24	1	3	28
Regional	8	1	4	13
State	0	0	0	0
Sub Total	37	4	8	49
Public Shows	5	20	5	30
Large Meetings	11	0	1	12
Total	53	24	14	91

Note: Does not include the high number of smaller capacity banquets and other such functions.

Source: Coopers & Lybrand and Facility Management, 1992

Again, this exhibit highlights the significant focus of the Hynes on convention and trade events geared towards attracting visitors from outside the area.

For comparison purposes, the information presented in Exhibit 1.4-3 presents the convention/trade events and public show event levels among selected comparable facilities. As outlined in the Exhibit, the Hynes is currently attracting convention/trade events within the range of comparable venues, while not attracting significant numbers of public shows. It is important to note that this comparative analysis does not consider the size or scope of exhibition events, simply the number of events. While some facilities may report significantly higher numbers of events, this does not necessarily suggest a more highly utilized facility nor a facility which generates higher economic impacts, since many events may have comparatively low attendance or draw a higher percentage of their attendance from the local population. Conversely, some facilities with less events may generate higher utilization and economic benefits by concentrating on large, high-impact events.

EXHIBIT 1.4–3
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
COMPETITIVE AND COMPARABLE FACILITY EVENT ANALYSIS
1992 EVENT LIST SUMMARY

Facility	Prime Gross Exhibit Space	Conventions & Trade Shows Requiring Exhibit Space	Public Shows Requiring Exhibit Space
Indianapolis\Indiana Convention Center	205,000	57	34
Chicago\Rosemont Exposition Center	350,000	54	36
Kansas City Convention Center	186,000	51	16
Baltimore Convention Center	120,000	51	36
Atlanta\Georgia World Congress Center	640,000	43	20
Boston\Hynes Convention Center (1)	193,000	37	5
Detroit\Cobo Conference\Exhibition Center	700,000	33	20
Pittsburgh\Lawrence Convention Center	131,000	27	14
Washington D.C. Convention Center	250,000	25	12
Milwaukee\MECCA	132,000	25	41
Atlantic City Convention Center	350,000	24	22

(1) 11 other meetings and 5 public shows requiring exhibit space were held at the Hynes Convention Center.

Note: The estimates for the competitive and comparable facilities are for a recent, "typical" year of operations, and were compiled from facility event calendars and discussions with facility management. The Rhode Island Convention Center and the Philadelphia Convention Center are both under construction and the Columbus Convention Center recently opened,therefore the three facilities do not have event histories. In addition, an event level was not available from the Javits Convention Center. In order, to more fully reflect the convention and tradeshow market, this analysis includes event estimates from the MECCA in Milwaukee and from the Kansas City Convention Center.

2. Quantified Market Demand

The purpose of this section is to provide an independent analysis of the magnitude of the potential event markets for various exhibition/stadium facility development options in Massachusetts, and to provide a detailed, quantified summary of the events which represent potential markets for proposed facility(s) development. The scope of this analysis focuses on both exhibition space events and fixed seating events. Each of these segments is defined and analyzed in detail throughout this section.

Various development sites for potential facility development have been submitted for analysis as part of this project. In performing the quantified market demand analysis, we have also focused on the impact that different sites throughout the Commonwealth may have on the potential event markets and eventual facility recommendations. A detailed evaluation of potential sites is presented in Volume II of this report.

2.1 Exhibition Space Events

In order to analyze the national and regional exhibition space market demand, we have conducted a sample market survey of potential users based on data contained in the following sources:

- Successful Meetings DataBank - Directory of Conventions;
- Trade Show Week Data Book;
- Encyclopedia of Associations; and
- State and Regional Associations (SRA) Directory.

We have utilized these and other data base sources in numerous convention, trade show and conference facility studies throughout the country. This experience provides us with the professional background necessary to both conduct and interpret the market survey.

The survey was conducted to determine the likelihood that event organizers from this market segment would conduct events in Massachusetts, their specific locational preferences and the types of facilities they would require to produce the event. The

approximate population of events which require over 10,000 net square feet of exhibition space and have an attendance of 500 or more, and the sample size (the number of event organizers in the population which were contacted) are outlined below:

National/Regional Event Survey

Population	3,159
Sample size	315

Through this survey process, we were able to develop an extensive level of detail specific to event markets in the Boston area and throughout the State.

One primary event characteristic in terms of facility requirements is the amount of exhibition space used by each event. In later sections of this report, we will assess the size and configuration of exhibition space appropriate for the development of a megaplex (combined exhibition and stadium facility) and a stand alone convention center. In preparing and presenting this market analysis, the potential event market population has been broken down into four groups based on exhibition space square footage within the following ranges:

- 0 to 10,000 net square feet of exhibit space,
- 10,001 to 50,000 net square feet of exhibit space,
- 50,001 to 100,000 net square feet of exhibit space, and
- Over 100,000 net square feet of exhibit space.

As noted earlier in this report, net square feet refers only to exhibition booth space. Therefore, a 100,000 square foot show would likely require approximately 200,000 square feet of total or gross square feet of exhibition space.

In performing the survey, events identified through sampling were evaluated in terms of characteristics unique to their event. Complete information was assembled regarding event characteristics such as exhibition, meeting and banquet space requirements, hotel demands, various other event related organizer preferences and the probability of these events rotating to a site located in Massachusetts. Based on the response of each of the event representatives contacted, some events were eliminated from the potential user group due to various rotational policies, destination preferences, number of delegates in the area and other related issues. These negative responses have been categorized and presented later in this section. Of those event organizers responding positively to a site in Massachusetts as an event destination, complete information was assembled regarding event characteristics, organizer preferences and their site preference for the

proposed facility. The sample survey findings regarding rotational policy and the level of positive response were extrapolated and applied to the total population. A breakdown of the population of potential events and the survey extrapolation is presented as Exhibit 2.1-1.

Within the Exhibit we have presented the event population by segment, the sample sizes and the positive response percentage. The positive response percentage reflects the percentage of those events sampled which would definitely, likely or possibly consider holding an event at a site in Massachusetts. A breakdown of the strength of the positive response (definitely, likely or possibly) is also included. As outlined in the Exhibit, positive response percentages registered for a potential facility in Massachusetts ranges from 21 percent for events which require less than 10,000 net square feet of exhibition space, up to 56 percent for those events requiring between 50,001 and 100,000 net square feet. It should be noted that these positive response percentages are not particularly high compared to other similar markets. However, among those registering a positive response (definitely, likely, or possibly), the percentage noting that they would definitely hold an event within the State (from 44 to 61 percent) is very high. All of these market characteristics have been incorporated into our analysis of potential event levels and resulting building recommendations.

The specific event characteristics of those national and regional event organizers responding positively to Massachusetts are broken down by market orientation and exhibition space requirements and presented in Exhibit 2.1-2. Specifically, the user profile regarding average space needs, attendance, hotel requirements, usage days and average rotational cycle provides the basis from which estimated facility utilization can be calculated.

In order to develop estimates of the annual event utilization for a convention and trade show facility at various locations in Massachusetts, a number of market calculations must be made as outlined in Exhibit 2.1-3. Specifically, the number of potential events as estimated from the survey results (first row in Exhibit) is divided by the average rotational cycle (second row). The resulting event total (third row) represents the events which would consider facilities in the Massachusetts region in a given year. This total must then be adjusted to reflect the competition for events in the region and the strength of the positive responses registered by the event organizers. This adjustment reflects the "market capture percentage" (fourth row). The resulting event total (fifth row) represents the number of events which would likely utilize facilities in Massachusetts on an annual basis during mature operations. The event totals can then be multiplied by the number of facility utilization days (sixth row) to estimate the total number of days in which the facility could be utilized by national/regional convention and trade shows (seventh row). Growth factors are then applied to calculate future years usage estimates.

Exhibit 2.1–1

Massachusetts Convention/Exhibition Facility Analysis
Calculation of Potential State–Wide Event Population
National/Regional Events Only

	Events Which Have The Following Exhibition Space Requirements:				
	Less than 10,000 NSF	**10,000 to 50,000 NSF**	**50,001 to 100,000 NSF**	**Over 100,000 NSF**	**Total**
Event Population by Segment	1,204	1,366	357	232	3,159
Sample Size	135	103	34	43	315
Positive Response Percentage	21%	41%	56%	35%	
Potential State–Wide Event Market	254	562	199	81	1,096

Positive Response Breakdown:

Definately	48%	61%	50%	44%
Likely	43%	29%	29%	22%
Possibly	10%	21%	21%	33%

Source: Coopers & Lybrand

Exhibit 2.1 – 2

Massachusetts Convention/Exhibition Facility Analysis
Potential Event Characteristics
National/Regional Events Only

	Events Which Have The Following Exhibition Space Requirements:			
	Less than 10,000 NSF	**10,000 to 50,000 NSF**	**50,001 to 100,000 NSF**	**Over 100,000 NSF**
Average Square Feet of Exhibition Space:				
Net	3,900	28,200	73,700	215,900
Gross	8,100	59,100	154,800	453,500
Average Event Attendees:				
Delegates	2,000	3,500	5,600	11,400
Exhibitors	116	600	1,600	3,900
Average Number of Usage Days:				
Move – in	1.6	1.9	3.2	3.3
Event	4.2	3.6	4.2	3.4
Move – out	1.1	1.2	1.8	2.4
Total Utilization Days	6.9	6.7	9.2	9.1
Average Meeting Space Square Footage	15,900	19,500	32,100	24,800
Average Meeting Room Requirements:				
1 – 50	9	5	7	5
51 – 100	3	6	7	4
101 – 500	4	5	8	6
501 – 1,000	1	1	2	2
Average Number of Times Auditorium Used	1.8	1.7	3.1	1.7
Average Attendance at Auditorium Event	3,300	3,100	2,500	800
Average Number of Times Ballroom Used	3.4	3.1	2.8	2.8
Average Attendance at Ballroom Event	2,000	1,900	2,000	4,600
Average Ballroom Square Footage Required	10,400	22,900	23,800	54,800
Average Peak Hotel Room Block	700	1,200	3,200	4,000
Average Room Block Nights	5	6	6	6
Average Hotels in Room Block	3	4	10	14
Percentage Requiring Adjacent Hotel	45%	58%	36%	33%
Percentage Using Shuttle Service	76%	77%	71%	78%

Source: Coopers & Lybrand, August/September 1992

Exhibit 2.1–3

Massachusetts Convention/Exhibition Facility Analysis
Annual Usage Day Calculations
National/RegionalEvents Only

	Events Which Have The Following Exhibition Space Requirements:				
	Less than 10,000 NSF	10,001 to 50,000 NSF	50,001 to 100,000 NSF	Over 100,000 NSF	Total
Potential State–Wide Event Market	254	562	199	81	1,096
Average Rotational Cycle	8.0	5.0	6.0	4.0	
Annual Potential Event Market	32	112	33	20	197
Market Capture Percentages:	18%	26%	35%	34%	
Estimated Annual Events:	6	29	12	7	54
Average Total Length of Event (Days)	6.9	6.7	9.2	9.1	
Total Annual Usage Days – 1992	41	193	110	64	408
Total Annual Usage Days – 1995	44	203	121	70	438
Total Annual Usage Days – 2000	49	226	135	78	488
Total Annual Usage Days – 2005	54	249	149	86	538

The methodology used in performing the calculations outlined above is summarixed as follows:

(1) Potential State–Wide Event Market is divided by the Average Rotational Cycle as estimated from the market survey.
(2) The resulting Annual Potential Event Market is multiplied by the Market Capture Percentage as calculated based on the survery results and the inventory of competitive facilities.
(3) The resulting Estimated Annual Events represent the total potential event levels which could be attracted to various markets within the State.
(4) The Estimated Annual Events are multiplied by the Average Total Length of Event, in order to calculate Total Annual Utilization Days.

Source: Coopers & Lybrand

These utilization day estimates, combined with the exhibition space square footage data are used to develop the appropriate size estimates for the facility.

In addition to national/regional convention and trade show events, we reviewed the potential facility utilization generated from State events and public or consumer shows. Based on our analysis, State events do not generally require the level of space provided for at a major convention/trade show facility. State trade show business currently represents a very small percentage of total utilization at the Hynes Convention Center. Public shows in the area currently use space at the World Trade Center and the Bayside Expo Center. Based on this review, it appears that very limited utilization could be generated for a new facility from either of these market segments. The remainder of this analysis, therefore, focuses on the national and regional event segments.

As part of the survey analysis, the specific site preferences of event organizers were also analyzed. Each organizer surveyed was asked to rank specific regions of the Commonwealth on a scale of 1 to 5 with 5 being the most preferred. The specific regions include:

- Boston/Cambridge

- Within 15 miles of Boston:
  Lynn/Peabody/Waltham/Quincy

- Central Portion of State:
  Worcester/Marlborough/Framingham/Uxbridge/Oxford/Holland

- Southern Portion of State:
  Foxboro/West Bridgewater/Bridgewater/Middleboro/Reynham

As outlined in Exhibit 2.1-4, Boston/Cambridge received a significantly higher response as compared to the other sites. Using these response levels, we can calculate the potential reductions in event potential resulting from convention/exhibition space locations outside Boston/Cambridge. The analysis indicates possible reductions to 57 percent of full market potential for sites within 15 miles of Boston, down to 42 percent of full potential for sites in the Southern portion of the State.

These percentages are used in analyzing the viability of exhibition space development on each of the potential sites. This exhibition space viability analysis focuses on a calculation of utilization or beneficial occupancy percentages. Beneficial occupancy is designed to measure potential exhibition space utilization annually as a percentage of total available space, as shown below.

Exhibit 2.1–4
Massachusetts Convention/Exhibition Facility Analysis
Impacts of Site on Annual Usage Day Estimates
National/Regional Events Only

	Events Which Have The Following Exhibition Space Requirements:				
	Less than 10,000 NSF	10,001 to 50,000 NSF	50,001 to 100,000 NSF	Over 100,000 NSF	Combined Average
Site Preference Ranking / Scale of 1 to 5 With 5 Being the Highest Ranking:					
Boston	4.3	4.2	4.6	4.8	4.5
Within 15 miles of Boston	3.2	2.6	1.8	2.8	2.5
Central portion of state	2.8	2.0	1.6	2.1	2.0
Southern portion of state	2.6	1.9	1.6	1.7	1.9
Resulting Percentage of Full Event Market Attracted to Each Site Region:					
Boston	100%	100%	100%	100%	100%
Within 15 miles of Boston	74%	62%	39%	58%	57%
Central portion of state	64%	49%	34%	44%	46%
Southern portion of state	60%	45%	34%	35%	42%

Source: Coopers & Lybrand

$$\frac{\text{Total Utilized Space}}{\text{Total Available Space}}$$

Total utilized space estimates are generated by the market analysis, while the available space is determined by the actual exhibition space in the facility multiplied by the 320 days the facility is assumed to be available for use per year. The 320 day figure accounts for holidays, maintenance and other factors which make it difficult or impossible to rent space to potential users or the equivalent of 45 days annually.

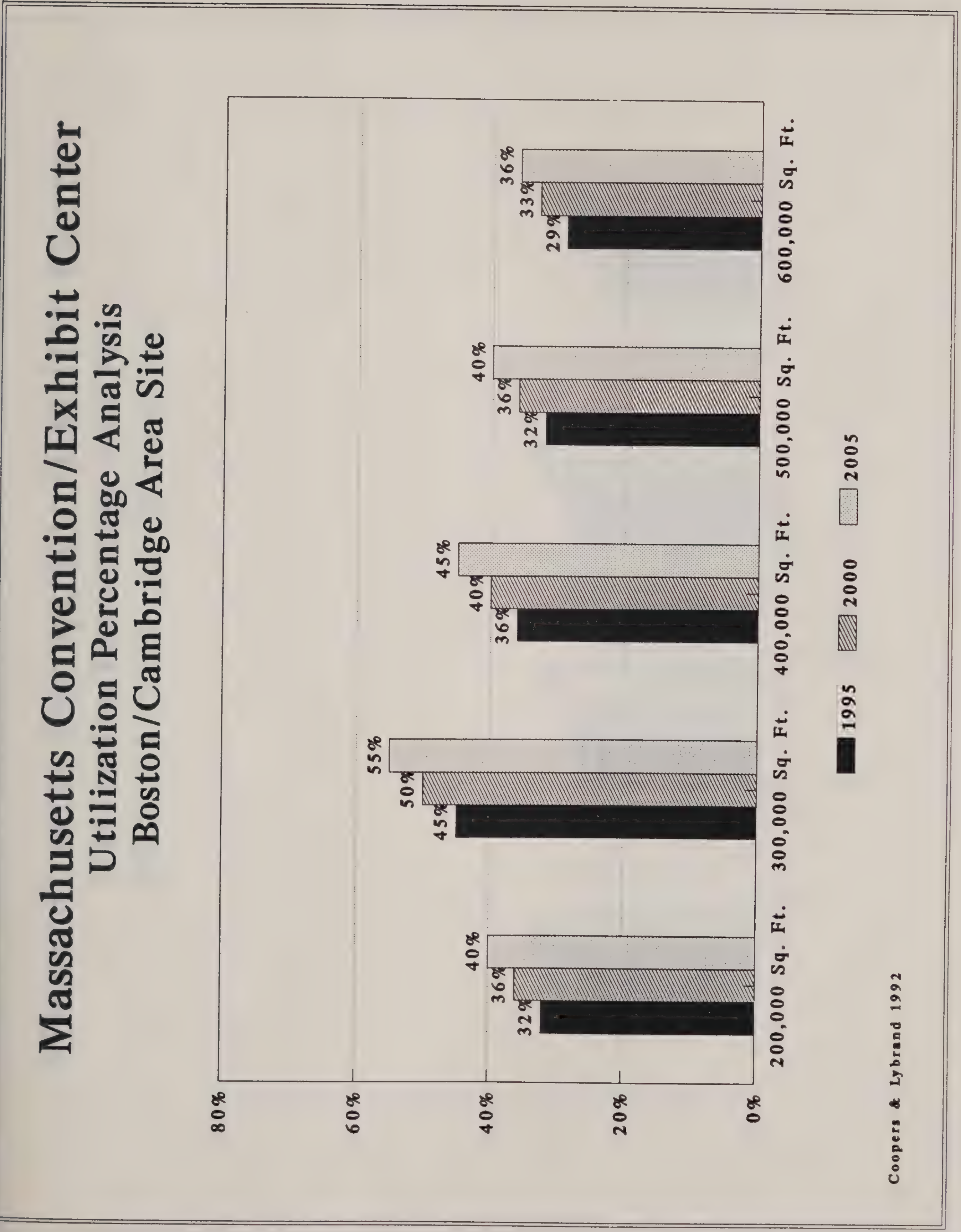
For purposes of this analysis, we have calculated the total utilized space for each of the four site regions for the years 1995, 2000 and 2005. These square foot utilization totals are then used to calculate the beneficial occupancy percentages for exhibition hall sizes ranging from 100,000 to 600,000 square feet. Exhibits 2.1-5 through 2.1-8 present the resulting percentages. In preparing and interpreting analyses of this type, we generally focus on a minimum target utilization percentage of approximately 50 percent as a level required to justify a particular building size. This target percentage incorporates utilization generated from state and national/regional events, as well as public shows. However, as noted earlier in this analysis, state events and local public shows do not represent a consistent, measurable source of event utilization for new facility development. As a result, a target utilization percentage range of 40 to 45 percent, incorporating only national/regional events, has been used in preparing this analysis. This lower range can be justified given that it is the national/regional events which generate the significant majority of economic impact, representing the primary motivation behind the development of convention facilities.

At utilization percentages lower than this, it would be difficult to support facility construction from a market demand perspective. At percentages significantly higher than the 40 to 45 percent range, potential events may be lost due to exhibition space size constraints. The analysis results for each of the specific geographic regions is summarized below:

Boston/Cambridge

As outlined in Exhibit 2.1-5, utilization percentages range from 32 to 40 percent over the 10 year analysis period for a 200,000 square foot exhibition hall. These percentages peak at a high of 55 percent for a 300,000 square foot facility, indicating a need for even greater space. The 400,000 square foot facility option peaks at 45 percent in 2005, with the 500,000 square foot facility reaching 40 percent. Providing 600,000 square feet of exhibition space would reduce the occupancy percentage to a high of 36 percent, below the desired range. Based on this beneficial occupancy percentage analysis, it appears that an exhibition hall of 400,000 to 500,000 square feet could be supported from a market

Exhibit 2.1-5



Massachusetts Convention/Exhibit Center
Utilization Percentage Analysis
Boston/Cambridge Area Site

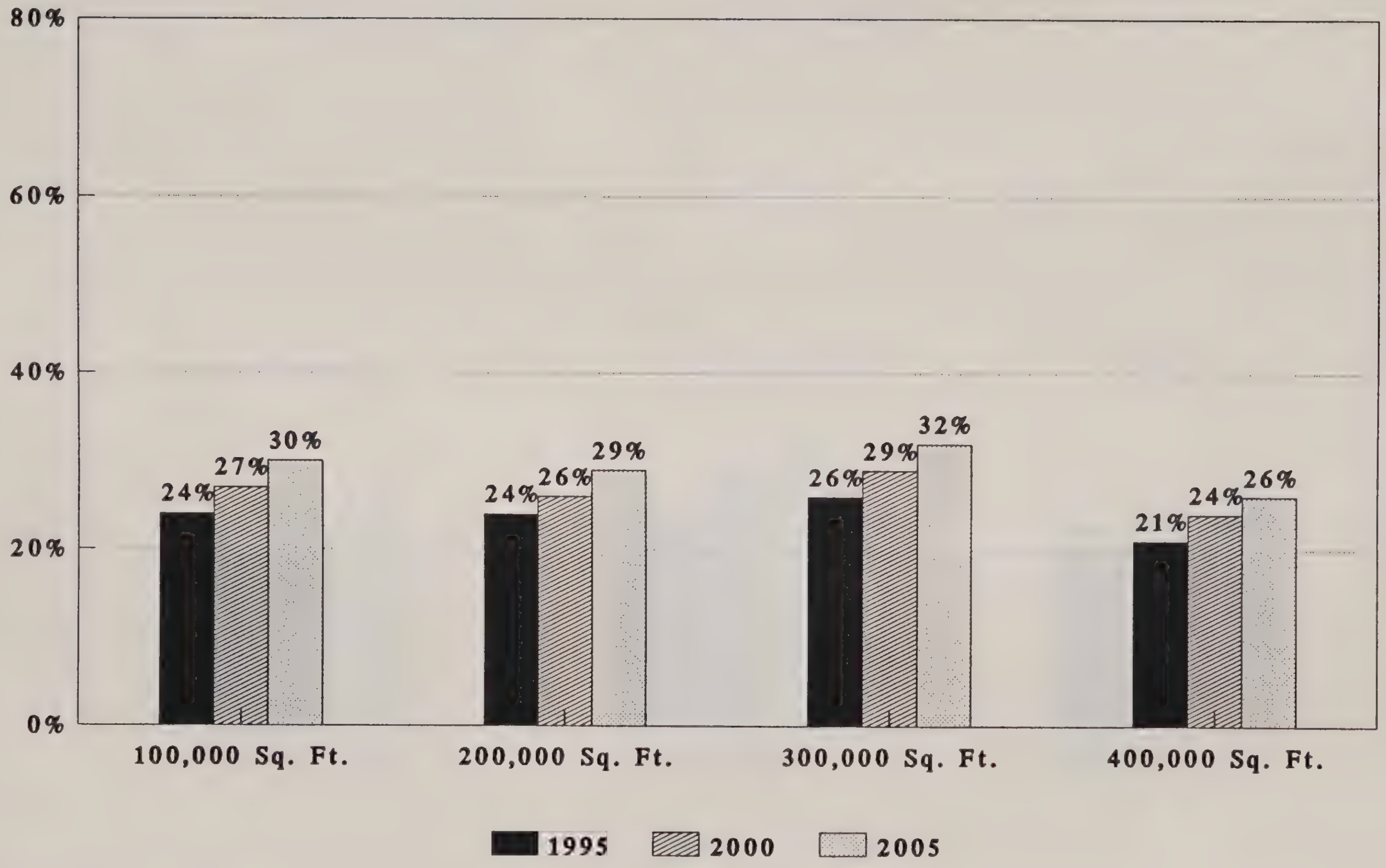
Coopers & Lybrand 1992

Exhibit 2.1-6

Massachusetts Convention/Exhibit Center

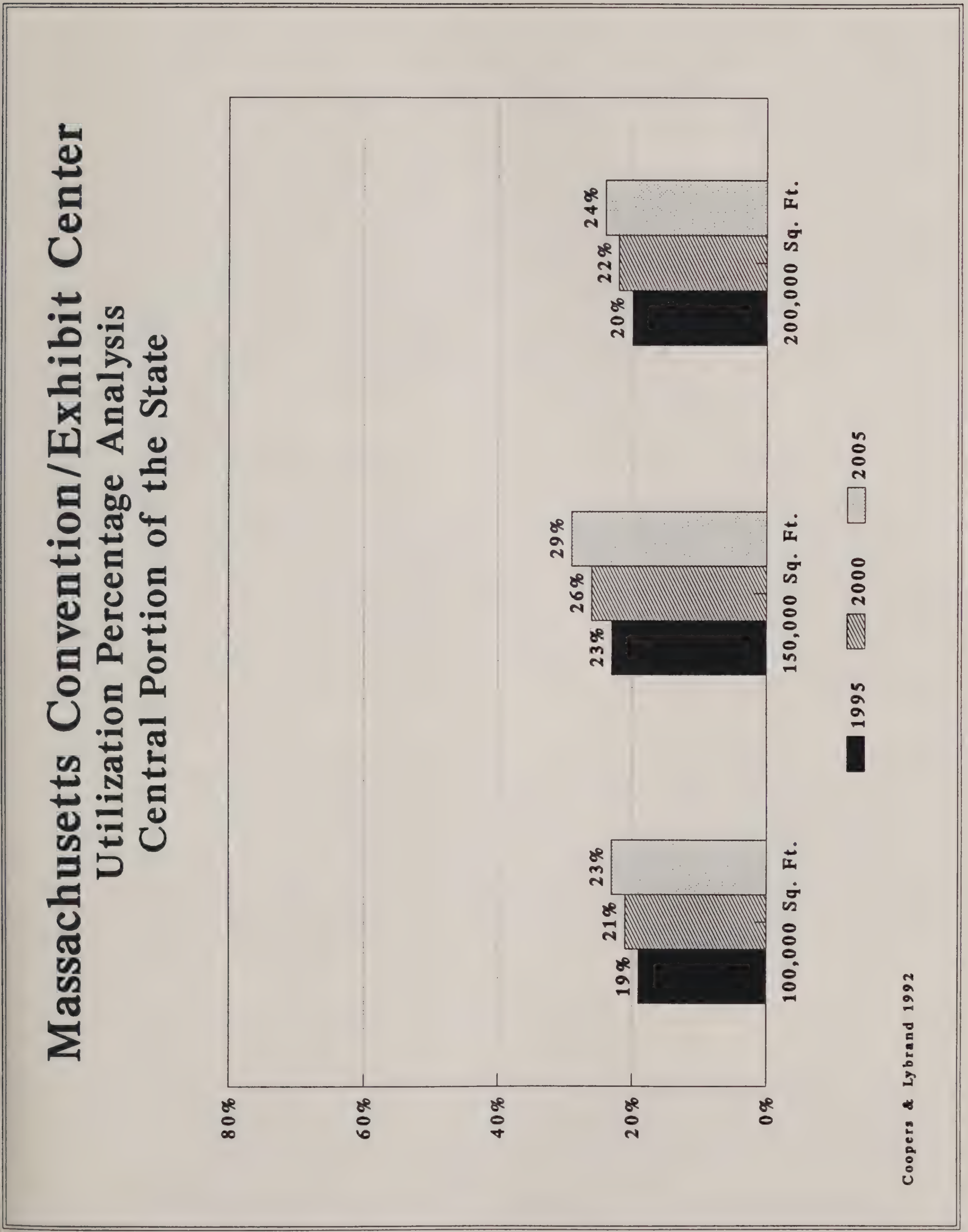
Utilization Percentage Analysis

Within 15 Miles of Boston Area



Coopers & Lybrand 1992

Exhibit 2.1-7



Massachusetts Convention/Exhibit Center

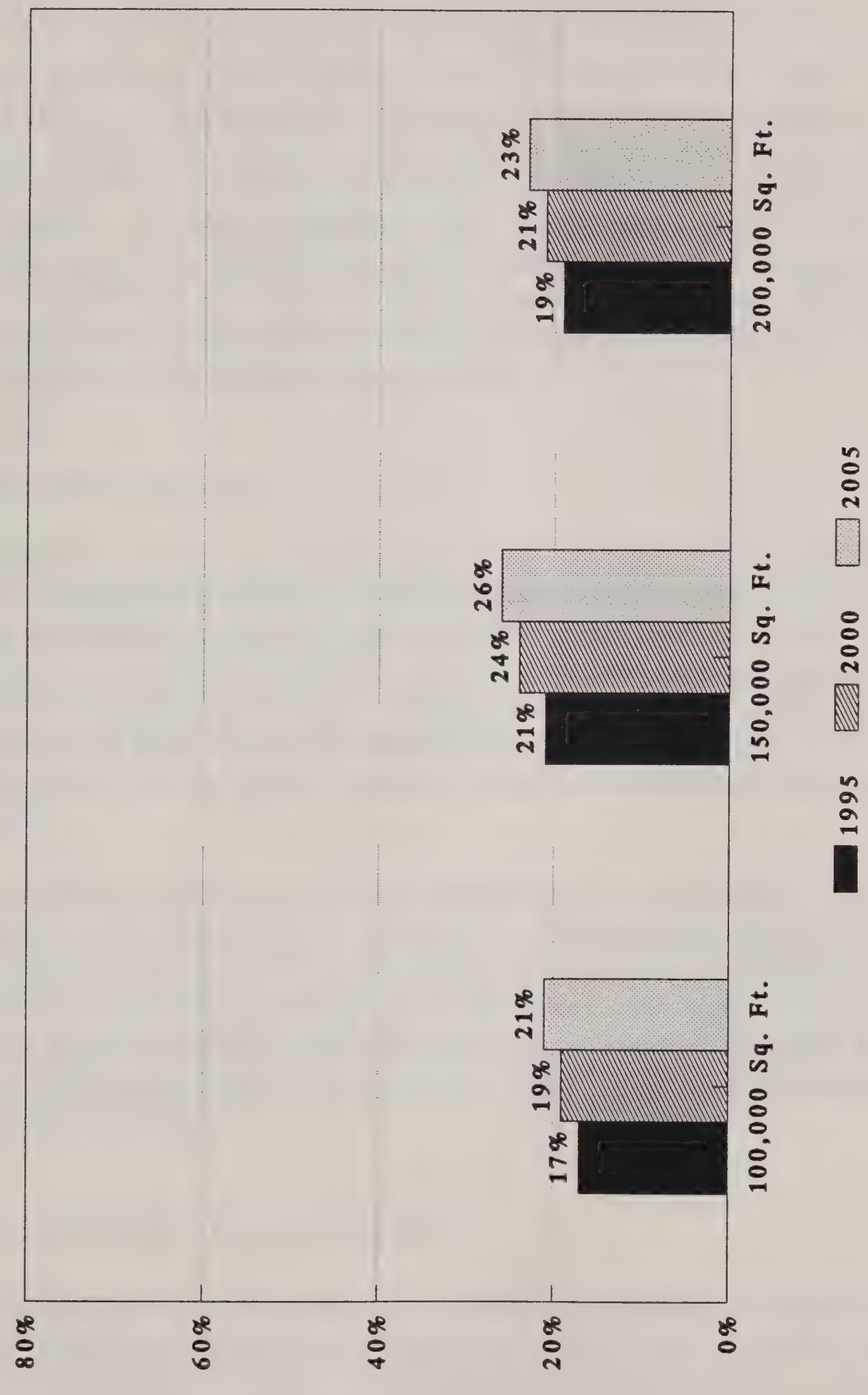
Utilization Percentage Analysis

Central Portion of the State

Coopers & Lybrand 1992

Exhibit 2.1-8

Massachusetts Convention/Exhibit Center
Utilization Percentage Analysis
Southern Portion of the State



Coopers & Lybrand 1992

perspective in Boston/Cambridge. As noted earlier in this report, a megaplex development would encompass both exhibition and stadium facilities. Should such an option be pursued, distinct exhibition space containing between 400,000 to 500,000 square feet should still be provided in addition to the fixed-seat stadium component of the facility. Such a strategy would allow for the continuous use of the exhibition space even as the stadium component of the facility is used for other activity. The stadium component, when not serving as a fixed seating venue, can be used as additional exhibition space, thereby, allowing the megaplex to attract exhibition space users which require additional exhibition space beyond that available in the convention center component and allow for additional flexibility in attracting simultaneous events. Such added space could result in megaplex utilization levels approximately 10 percent higher than levels for a stand alone convention center.

Within 15 Miles of Boston

As outlined in Exhibit 2.1-6, utilization percentages have been calculated for facilities ranging from 100,000 to 400,000 square feet of exhibition space. The highest percentage calculated corresponds to the 300,000 square foot option, reaching 32 percent by the year 2005. Even at this highest percentage, the target of 40 to 45 percent is not reached. These results indicate that while there may be a market for some amount of exhibition space within this region, it is not to the level that would be justified as part of a convention/exhibition and stadium megaplex.

Event organizers within every industry throughout the country place a significant importance on the availability of adequate nearby convention hotels and other visitor industry attractions. The importance of these factors was highlighted in Exhibit 1.2-1 presented in Section 1 of this report. The lack of demand for extensive levels of exhibition space in areas outside Boston/Cambridge is likely a result of the actual and/or perceived lack of such adjacent and nearby hotel and other attractions.

Central and Southern Portion of the State

The utilization percentage results for the central and southern portions of the state are similar to regions surrounding Boston. Some level of exhibition space may be justified, however not to the level that would accommodate a megaplex development. As outlined in Exhibits 2.1-7 and 2.1-8, utilization percentages do not exceed 29 percent for any of the exhibition space development options.

As part of the facility sizing, meeting and ballroom space was also analyzed. In conducting the surveys of potential event organizers, information on the required square footage of meeting and ballroom space was collected. This information has been analyzed and is presented in Exhibit 2.1-9. As outlined in the Exhibit, the maximum square footage of meeting space required by an event type is 85,700. However, the ability of the facility to accommodate concurrent events will be critical. Also presented in the Exhibit is the level of meeting space to accommodate 2 and 3 concurrent events of, using the 90 percent utilization level NSF. Based on this analysis, between 80,000 and 120,000 square feet of meeting space would be needed to accommodate potential market demand. The final exhibition hall size will impact the level of meeting space appropriate for the facility.

The level of ballroom space required for this project has also been analyzed as presented in Exhibit 2.1-10. As outlined in the Exhibit, the largest ballroom square footage required for an event category totals nearly 100,000 square feet. However, dedicated ballroom space of this extensive size represents an unrealistic dedication of rentable space. In developing estimates of required ballroom space, facility design should accommodate up to 90 percent of the potential event market. Based on this criteria, a total of 40,000 to 45,000 square feet of ballroom space would be appropriate. This level of space would accommodate most event types. In order to accommodate the largest event types, as well as concurrent events, additional ballroom space may occasionally be required. In such cases, the flexibility to convert portions of the exhibition hall into ballroom space would be advantageous.

* * * * * * * *

As noted earlier in this section, the site preferences and facility requirements have been assembled only from those event organizers indicating some level of positive response to holding an event within the Commonwealth. There are a variety of reasons that event organizers would not consider a site in the Commonwealth for producing an event. These reasons have been categorized and are presented on page 40.

EXHIBIT 2.1–9
MASSACHUSETTS STADIUM/EXHIBITION FACILTIY ANALYSIS
MEETING ROOM ANALYSIS

Square Footage of Meeting Rooms	Utilization %	Square Footage of Meeting Rooms	Utilization %	Square Footage of Meeting Rooms	Utilization %	Square Footage of Meeting Rooms	Utilization %
Less than 10,000 NSF		**10,001 NSF – 50,000 NSF**		**50,000 NSF – 100,000 NSF**		**100,000 NSF +**	
47,200	100%	72,400	100%	85,700	100%	52,500	100%
35,100	95%	50,400	95%	57,200	95%	42,000	95%
24,300	90%	33,600	90%	51,900	90%	34,300	90%
23,600	85%	28,500	85%	51,900	85%	34,300	85%
23,100	80%	28,300	80%	44,600	80%	33,600	80%
19,900	75%	28,200	75%	38,300	75%	33,600	75%
19,300	70%	23,600	70%	38,200	70%	25,700	70%

90% Analysis

Concurrent Events	Required Sq. Ft.	Concurrent Events	Required Sq. Ft.	Concurrent Events	Required Sq. Ft.	Concurrent Events	Required Sq. Ft.
1 event	24,300	1 event	33,600	1 event	51,900	1 event	34,300
2 events	48,600	2 events	67,200	2 events	103,800	2 events	68,600
3 events	72,900	3 events	100,800	3 events	(1)	3 events	102,900

(1) Beyond a practical square footage total.

Note: These results indicate that approximately 80,000 to 120,000 square feet would be necessary to accommodate large, as well as concurrent events. This space should be divisible into approximately 50 to 70 separate break out rooms.

Source: Coopers & Lybrand

EXHIBIT 2.1–10
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
BALLROOM ANALYSIS

Square Footage of Ballroom	Utilization %	Square Footage of Ballroom	Utilization %	Square Footage of Ballroom	Utilization %	Square Footage of Ballroom	Utilization %
Less than 10,000 NSF		**10,000 NSF – 50,000 NSF**		**50,000 NSF – 100,000 NSF**		**100,000 NSF +**	
24,000	100%	71,300	100%	80,200	100%	96,000	100%
24,000	95%	45,000	95%	67,300	95%	90,000	95%
15,000	90%	40,000	90%	40,500	90%	75,600	90%
15,000	85%	36,000	85%	40,500	85%	75,600	85%
13,000	80%	30,000	80%	31,900	80%	31,200	80%
10,800	75%	24,000	75%	21,000	75%	31,200	75%
10,800	70%	21,000	70%	21,000	70%	27,000	70%

Note: As outlined in this analysis, a minimum of 40,000 square feet of ballroom space would be required to accommodate most event types. In order to accommodate the largest potential events, as well as concurrent mid–sized events, additional ballroom space may occasionally be required. In such cases the flexibility to convert portions of the exhibition hall into ballroom space would be critical.

Source: Coopers & Lybrand

Reasons For Not Considering Massachusetts

Regional show, outside of New England	17%
Lack of area members	15%
Prefer warmer weather	12%
Lack of event history	8%
Distance	8%
Require geographically central location	8%
Cost	7%
Lack of industry customers	7%
Other industry shows operating in region	3%
Union/right-to-work state	3%
Prefer Las Vegas	2%
Not familiar with area	1%
Not enough airlines into Massachusetts	1%
Not enough entertainment in area	1%
Other (1)	7%
Total	100%

(1) Primarily due to lack of feature unique to particular show, for example, lack of interest in country music, or only rotate to "oil patch" areas.

It is clear from this chart that the geographic region of the Commonwealth within the country is a primary reason for negative responses. This supports the organizer preference data presented in Exhibit 1.3-4 of Section 1. Approximately 40 to 50 percent of the negative responses could be attributable to region and weather factors. Many of the other factors such as lack of event history, cost, union issues, familiarity and other such items could be mitigated to some degree through marketing efforts.

Exhibition Space Event Summary

Within the Commonwealth of Massachusetts, sites located in Boston/Cambridge provide the market strength to support additional levels of exhibition space development beyond which currently exist in the market area. Therefore, the megaplex concept combining convention/exhibition space with a professional sports stadium, or a stand alone convention center in Boston/Cambridge has been included in the financial and economic analysis presented in the remaining section of this report and the architectural analysis included in Volume II. The development of a megaplex facility would allow for the accommodation of both convention/exhibition and fixed seating event markets, while the development of a new convention center would accommodate only the convention and exhibition market demand. Therefore, in considering the convention center only development option, the fixed-seating markets would need to be addressed separately.

The development of a megaplex or a stand alone convention center in other regions throughout the Commonwealth would not likely provide for event utilization levels which are sufficient to support the facilities from a market perspective. Focus instead should be placed on the stadium only component as a potential development option on various sites throughout the Commonwealth.

It should be noted that the ability of a megaplex or a stand alone convention center to attract and accommodate the full market potential is based on a comprehensive market plan and assumes that the visitor infrastructure such as hotels, restaurants and transportation systems are in place to house and serve the event delegates. To the extent that these amenities are not available, the market results should be reduced.

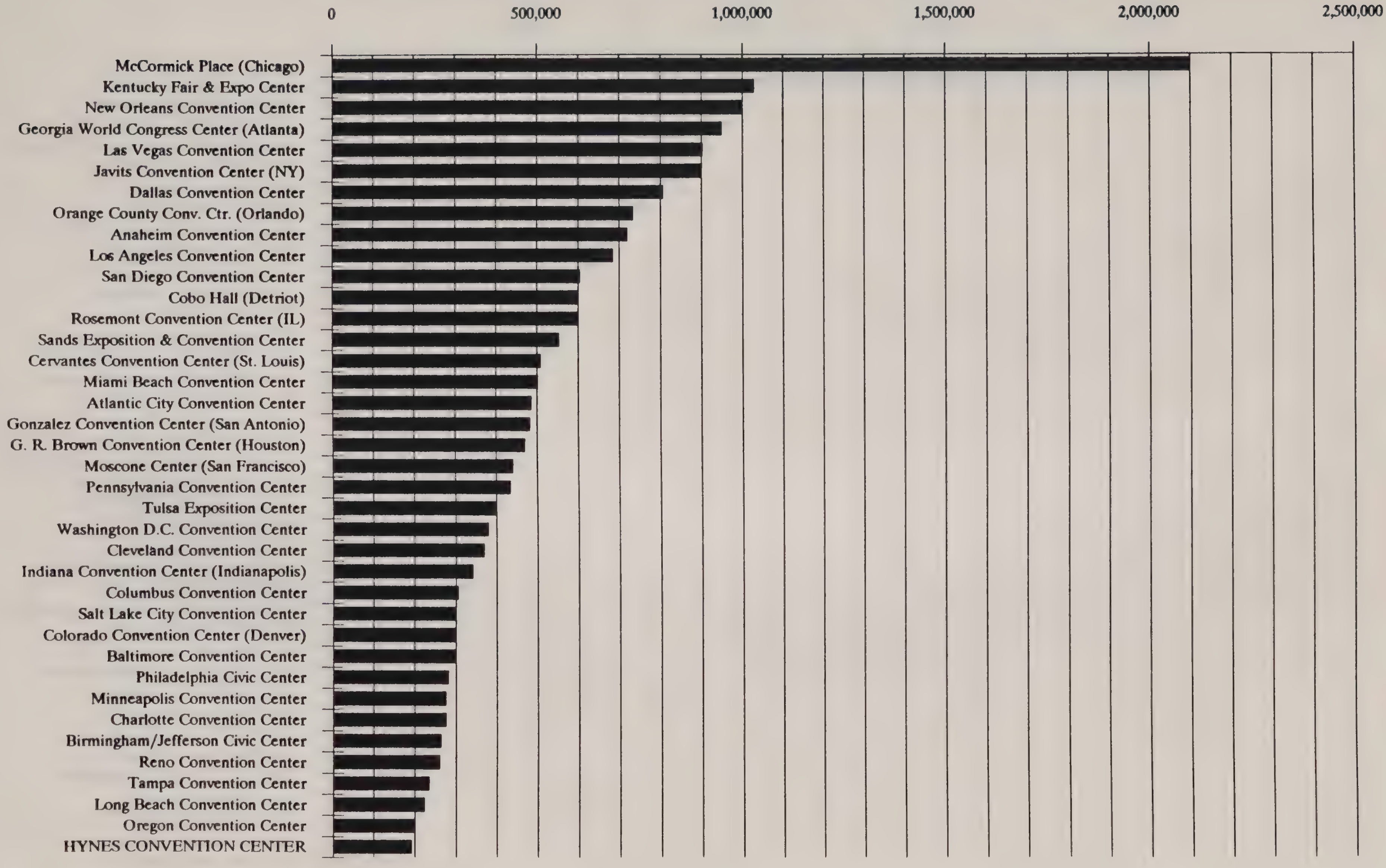
Furthermore, the market results represent total demand for the Boston metropolitan area. A portion of the estimated demand is already being captured by the area's existing facilities, therefore, incremental demand is generated from events that can not currently be accommodated within the marketplace.

Currently, the Hynes, with 193,000 square feet of exhibition space is ranked as the 38th largest convention/exhibition center in the United States, based on the space available or under construction at other prime convention centers around the country, as shown in Exhibit 2.1-11. The development of a stand alone convention center or a megaplex would reposition the facility ranking between 23rd and 17th, assuming 400,000 to 500,000 square feet of exhibition space is developed, respectively, as shown in Exhibit 2.1-12 and Exhibit 2.1-13. Furthermore, considering the exhibition space available in the fixed seating portion of the megaplex facility, the total exhibition space available could reach 680,000, positioning the facility to the ranking of the 11th largest exhibition facility in the United States as illustrated in Exhibit 2.1-14.

In considering the size of the exhibition space recommended for the convention center or megaplex, it has been assumed that all of the national and regional conventions and trade shows which were presented in the market analysis will be held at the new facility. Therefore, the existing Hynes Convention Center would need to be repositioned to focus on event segments other than the national and regional convention, such as international seminars and congresses, large meeting and conference uses or other such market segments. If the Hynes continues to host some of the national or regional conventions or trade shows, facility occupancy percentages at the new convention center or megaplex would be reduced.

Within the remainder of this section, we present an analysis of the fixed seating or stadium event market, the potential event levels and how various sites could impact these event levels.

EXHIBIT 2.1-11
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
EXHIBIT HALL COMPARISON - HYNES CONVENTION CENTER



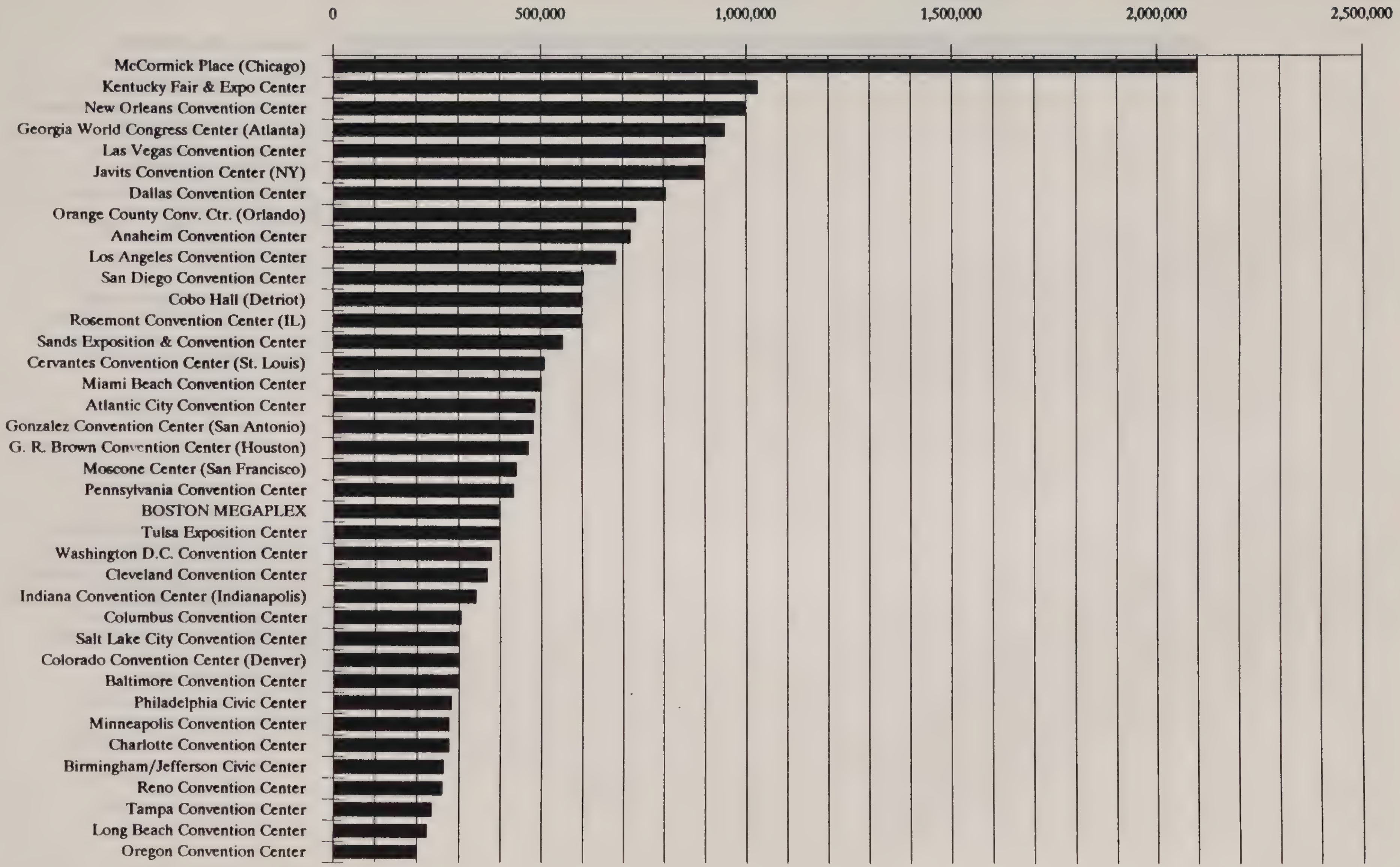
Source: Facility Management, Coopers & Lybrand

[illegible]

EXHIBIT 2.1-12

MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS

EXHIBIT HALL COMPARISON - BOSTON MEGAPLEX AT 400,000 SQ. FT.

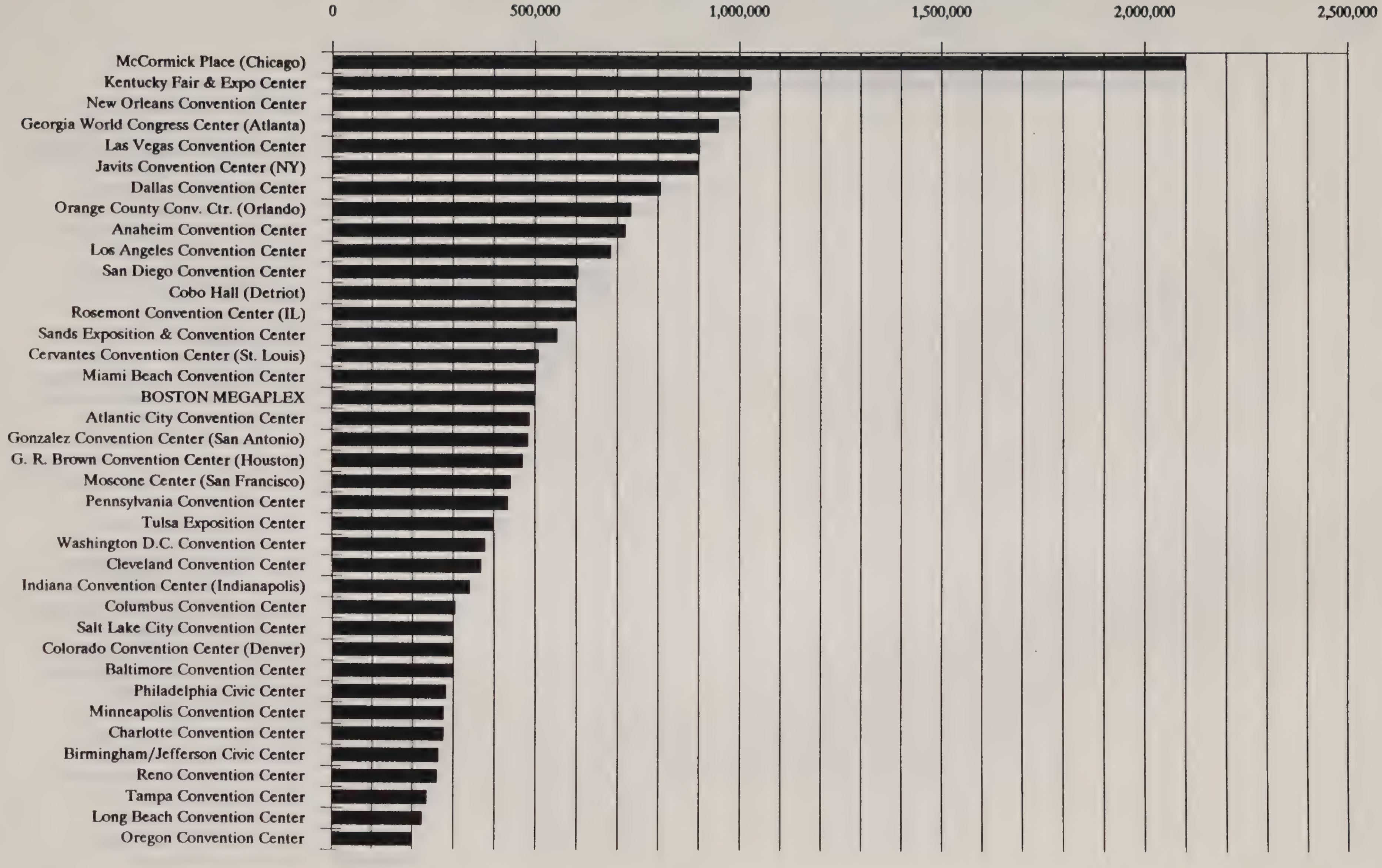


Source: Facility Management, Coopers & Lybrand

EXHIBIT 2.1-13

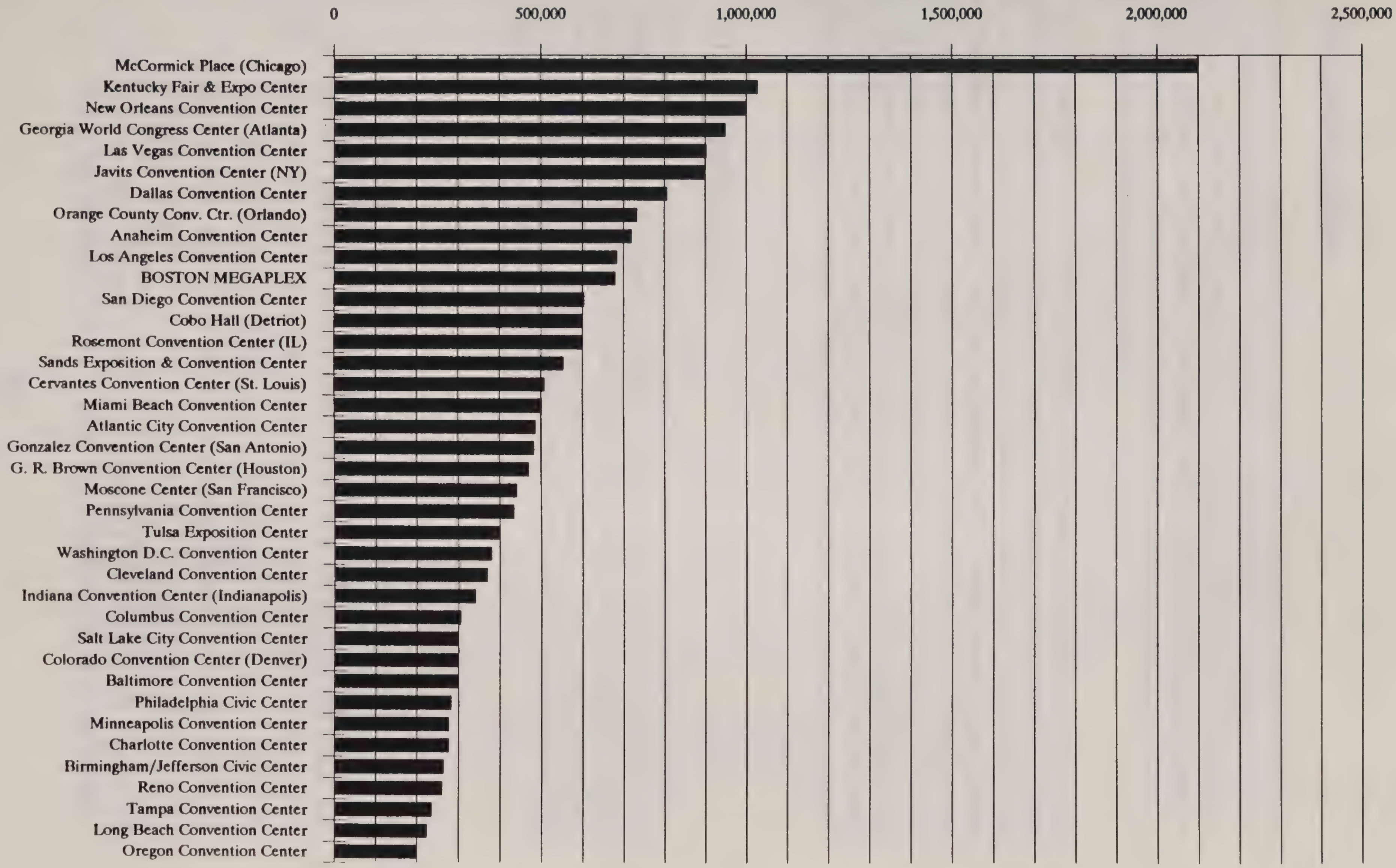
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS

EXHIBIT HALL COMPARISON - BOSTON MEGAPLEX AT 500,000 SQ. FT.



Source: Facility Management, Coopers & Lybrand

EXHIBIT 2.1-14
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
EXHIBIT HALL COMPARISON - BOSTON MEGAPLEX AT 680,000 SQ. FT.



Source: Facility Management, Coopers & Lybrand

2.2 Fixed Seating Utilization

The development of a professional sports stadium can involve a number of different facility concepts, including open-air or domed roof structures. The purpose of this analysis is to evaluate the non-sporting and sporting event levels that various stadium development options could attract. The results of this analysis will then be used to determine the viability of further detailed analysis of the stadium concept, and how the site of the facility could impact this viability.

Based on our analysis of local existing sports, entertainment and exhibition facilities in Massachusetts, experiences of similar stadiums and interviews with promoters of these various events, a range of potential facility utilization has been prepared for the proposed stadium development, both as an open-air and a domed venue. Our market analysis experience working on similar projects in Washington D.C.; Buffalo, New York; Cleveland, Ohio; Philadelphia, Pennsylvania and other professional sports markets throughout the country enables us to thoroughly analyze and quantify the event potential for the proposed fixed seating project. These estimates have been prepared for a stabilized year of operations. Descriptions and estimates of events are outlined below.

2.21 Non-Sporting Events

The level of non-sporting events such as concerts and motor events held at stadium facilities is largely a function of local economic and demographic considerations. In Exhibit 2.2-1 and Exhibit 2.2-2, we present a summary of non-sporting event levels for various comparable markets. These totals, combined with our analysis of event markets within the Commonwealth, have been used to estimate the event levels outlined below:

Concerts

The primary venues for concert events are arenas and amphitheaters. Capacities at these facilities generally range from 15,000 to 25,000, and are well suited to typical concert attendance levels. Several times per year, a performer or performers will generate attendance levels higher than the capacity of standard arena facilities. These events are primarily held at sports stadiums, usually domed facilities. The actual number of large touring acts varies from year to year. Based on discussions with area concert promoters and other such analysis, annual concert events levels are estimated to range between 2 to 4, depending on the facility roof structure. These estimates are outlined in Exhibits 2.2-1 (Open-air) and 2.2-2 (Domed), along with event levels for several comparable

EXHIBIT 2.2–1
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
ANNUAL EVENT LEVELS – RECENT 12 MONTH CALENDAR
COMPARABLE OPEN AIR STADIUMS

Events	Giant Stadium East Rutherford, New Jersey	Tampa Stadium Tampa, FL	L.A. Memorial Coliseum Los Angeles, CA	Veterans Stadium Philadelphia, PA	Riverfront Stadium Cincinnati, OH	Jack Murphy Stadium San Diego, CA	Foxboro Stadium Foxboro, MA	Projected Stadium Complex Massachusetts
Non Sporting Events								
Concerts	4	0	3	4	1	1	6	2 – 4
Motor Sports/Other (1)	4	2	2	0	0	3	0	2
Public Shows	1	2	0	0	0	0	0	0
Other Events (2)	0	8	0	3	3	22	9	3 – 5
Total	*9*	*12*	*5*	*7*	*4*	*26*	*15*	*7 – 11*
Sporting Events								
College Football/ Baseball	5	2	5	17	3	7	0	2
Other Sports (3)	7	3	15	1	1	4	2	4
Total	*12*	*5*	*20*	*18*	*4*	*11*	*2*	*6*

Notes:
(1) Motor Sports/Other includes all motor sporting events, thrill shows, and circuses.
(2) Other Events include parking lot sales and rentals, barbeques, sports practices and clinics, stadium festivals, wrestling, and religious crusades.
(3) Other Sports includes high school sporting events and exhibition soccer games.

Source: Coopers & Lybrand and Facility Management

EXHIBIT 2.2–2
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
ANNUAL EVENT LEVELS – RECENT 12 MONTH CALENDAR
COMPARABLE DOMED STADIUMS

Events	Kingdome Seattle, Washington	Pontiac Silverdome Pontiac, MI	Georgia Dome Atlanta, Georgia	Hubert H. Humphrey Metrodome Minneapolis, MN	Indiana Hoosier Dome Indianapolis, IN	Toronto Skydome Toronto, Canada	Projected Stadium Complex Massachusetts
Non Sporting Events							
Concerts	0	2	2	0	4	6	3 – 4
Motor Sports/Other (1)	3	4	4	2	3	4	2
Public Shows	6	10	8	0	12	6	1 – 2
Other Events (2)	3	14	8	9	4	0	5 – 6
Total	*12*	*30*	*22*	*11*	*23*	*16*	*11 – 14*
Sporting Events							
College Football/ Baseball	1	2	4	28	5	0	2
Other Sports (3)	2	11	9	13	15	2	4 – 6
Total	*3*	*13*	*13*	*41*	*20*	*2*	*6 – 8*

Notes:
(1) Motor Sports/Other includes all motor sporting events, thrill shows, and circuses.
(2) Other Events include parking lot sales and rentals, barbeques, sports practices and clinics, stadium festivals, wrestling, and religious crusades.
(3) Other Sports includes high school sporting events and exhibition soccer games.

Source: Coopers & Lybrand and Facility Management

stadiums around the country. As outlined in the Exhibits, the lowest number of concerts hosted by a stadium is zero, while the highest number of concerts among those surveyed is 6 performances conducted at the Toronto Skydome.

Motor / Other Events

Based upon discussions with national promoters of motor events, it has been estimated that the proposed stadium could host 2 motor events throughout the year with either a domed or open-air stadium facility.

Public Shows

Public shows generally consist of product exhibitions geared towards the local population. Domed stadium venues are occasionally host to these types of events, especially those requiring high ceiling heights and other unique stadium accommodations. Based on the market analysis, it is estimated that 1 to 2 public show events could be accommodated at a domed stadium constructed within the Commonwealth, depending on the number of competing facilities within the market. For example, a Boston stadium facility would have to compete with numerous other exhibition facilities, and may only attract 1 public or consumer show. Locations outside the Boston area could attract additional public show events annually depending on the specific market.

Other Events

Other events incorporate a wide variety of attractions including religious festivals, rodeo/western events, trade events, local private and public functions, and other such events which generally draw a high percentage of their attendance from the local area. Based on our review of comparable stadium projects, it is estimated that a new domed stadium in Massachusetts could attract between 5 and 6 other events of varying sizes, while an open-air facility could attract between 3 and 5 such events.

In addition to these annual event types, there is a potential to attract non-recurring events such as national political conventions, international and national sports festivals, and other such events. Due to their uncertain rotational patterns, we have not included these event types in our annual estimates.

2.22 Sporting Events

The level of potential non-professional sporting events such as college and high school sports is largely dependant on specific and unique conditions within a particular market. The number of schools, professional sporting teams, alternative venues and other such factors will impact facility non-professional sporting event levels. For example, the Metrodome in Minneapolis is host to the University of Minnesota football team, generating 6 to 8 events annually. There is no such university demand within the Seattle market; therefore, the Kingdome plays host to only 3 non-professional sporting events annually. Summaries of the non-professional sporting event totals prepared for this analysis for both the open-air and domed stadium facilities were presented in Exhibits 2.2-1 and 2.2-2.

Based on our analysis of other stadiums and discussions with the United States Soccer Association, the Massachusetts Interscholastic Athletic Association and other sports industry representatives, it is estimated that the proposed stadium could be host to approximately 6 to 8 other sporting events annually, depending on roof structure. Naturally this total could change with potential changes in college and high school sporting program preferences.

As noted earlier in the report, professional sports teams are the primary tenants at major stadium facilities. Within the Commonwealth, there are currently four professional sports teams. For purposes of this report, we have assumed that the New Boston Garden would be the home of the Boston Celtics and Bruins, and that the Red Sox would continue to play at Fenway Park. The New England Patriots have been considered as a potential tenant at any new stadium development.

Potential event utilization from professional football is not subject to socioeconomic or other variables. Event levels would primarily consist of 8 regular season and 2 pre-season games. Attendance at professional football games can vary and often depends on the performance of the team and the local economic conditions. League average attendance levels have historically ranged from 60,000 to 70,000. Patriots attendance levels have historically ranged from 41,000 to 55,000. Attendance at a new stadium development could reach a level closer to the league averages provided that modern fan amenities are included as part of the project, and performance of the Patriots is competitive with other teams in the League.

As part of this analysis, we have also developed preliminary estimates of the general seating, private suite and club seating specifications appropriate for the project. Our focus for these estimates has been on the Boston market, based on the assumption that such a major market facility would require specifications

larger or as large as any other market in the State. This will ensure that any site/configuration analysis using these specifications which takes place as part of future project analyses will not understate the required building size.

In Exhibit 2.2-3, we present an analysis of the ratio of area population to average attendance levels for facilities throughout the NFL. As outlined in the Exhibit, the average population penetration is 1.61 percent. Applying this penetration rate to the Boston area population, a total average attendance of approximately 61,000 is estimated. However, this analysis includes three markets which are significantly different than any of the other NFL cities, specifically Green Bay (very low population) and New York and Los Angeles (high population levels.) Applying the penetration analysis without these cities, a total attendance level of approximately 75,000 is reached. Based on this analysis, stadium capacity of approximately 65,000 to 75,000 would be appropriate for this project. It should be noted that this capacity is consistent with other facilities in the league and the capacity of most of the recently developed football stadiums. Also included in this analysis is a calculation of the percentage of companies with annual revenues over $25 million. This is an important measurement in evaluating the ability of the corporate market to support private suite and club seats amenities. As outlined in Exhibit 2.2-4, 27 percent of the Boston corporate base have annual revenues in excess of $25 million. This compares favorably with a league average of 25 to 26 percent.

The inclusion of private suites in any stadium development has become an important component to the revenue generating potential of professional sports facilities. The primary customer for these suites is generally larger area corporations. In order to analyze the potential suite levels justified for this project, we have prepared a penetration analysis of suites to major companies (those with annual revenue over $5 million.) Based on this analysis, presented in Exhibit 2.2-4, a total of 250 to 310 suites could be supported market wide. Currently, Fenway Park and the New Boston Garden account for approximately 150 of this potential. As a result, based on a review of the corporate basis as compared to other NFL markets, a new stadium facility in Massachusetts could support private suites development within the range of approximately 100 to 160 private suites as outlined in Exhibit 2.2-5.

Similar to private suites, club seats have played an important role in the revenue generating potential of professional sports stadiums. Exhibit 2.2-6 presents a penetration analysis of club seats to major companies. The market for club seats also includes segments of the general population. Exhibit 2.2-7 presents a penetration analysis of club seats to population levels. This Exhibit indicates that the market could support between 5,700 and 9,500 club seats. As outlined in Exhibit 2.2-8, a new stadium may support between 5,500 and 6,500 seats.

EXHIBIT 2.2-3
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
NATIONAL FOOTBALL LEAGUE MSA DEMOGRAPHICS
POPULATION VS. AVERAGE ATTENDANCE

METROPOLITAN AREA	TOTAL POPULATION	1991-1992 AVERAGE ATTENDANCE	ATTENDANCE POPULATION PENETRATION
Green Bay	196,000	52,271	26.67%
Buffalo	1,187,000	78,973	6.65%
New Orleans	1,236,000	67,593	5.47%
Kansas City	1,585,000	76,356	4.82%
Indianapolis	1,258,000	51,978	4.13%
Denver	1,860,000	74,410	4.00%
Cincinnati	1,752,000	58,151	3.32%
Pittsburgh	2,232,000	59,044	2.65%
Cleveland	2,755,000	71,694	2.60%
Minneapolis	2,501,000	61,089	2.44%
Seattle	2,601,000	63,358	2.44%
Tampa	2,110,000	50,188	2.38%
Phoenix	2,170,000	43,995	2.03%
Miami	3,241,000	62,452	1.93%
San Diego	2,562,000	49,075	1.92%
Atlanta	2,915,000	54,954	1.89%
Houston	3,742,000	61,650	1.65%
Dallas	3,964,000	61,647	1.56%
Washington D.C.	3,988,000	54,692	1.37%
Detroit	4,673,000	63,139	1.35%
Philadelphia	5,937,000	65,469	1.10%
San Francisco	6,334,000	65,345	1.03%
New York *	18,030,000	151,401	0.84%
Chicago	8,092,000	66,153	0.82%
Los Angeles *	14,824,000	118,806	0.80%
Average Penetration	4,069,800	67,355	1.61% **
Boston (actual)	3,791,000	41,031	1.08%
Boston	3,791,000	60,911 ***	1.61% **
Boston	3,791,000	75,130 ***	1.98% ****

* Markets include two NFL teams as indicated by average attendance figures.
** Average does not include penetration percentage in Green Bay.
*** Attendance level derived by multiplying the population by the average penetration.
**** Penetration ratio excludes Green Bay, New York, and Los Angeles.

Source: **NFL offices, stadium management, industry periodicals.**

EXHIBIT 2.2–4
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
SELECTED SPORTS FACILITIES MARKETS
PRIVATE SUITE CORPORATE PENETRATION ANALYSIS

METRO AREA	COMPANIES WITH REVENUE > $5 MIL	PRIVATE SUITES MARKET WIDE	RATIO OF COMPANIES TO PRIVATE SUITES	% OF COMPANIES WITH REVENUE > $25 MIL
New York City	15,434	284	54 : 1	26%
Houston	4,467	140	32 : 1	30%
Philadelphia *	5,440	249	22 : 1	25%
San Francisco *	4,709	219	22 : 1	25%
Denver *	2,100	127	17 : 1	24%
Minneapolis	3,112	202	15 : 1	21%
Atlanta	3,454	228	15 : 1	27%
Chicago	6,739	489	14 : 1	25%
Kansas City	1,223	99	12 : 1	32%
Phoenix	1,795	147	12 : 1	22%
Washington, D.C. *	4,163	371	11 : 1	26%
Miami	2,564	233	11 : 1	20%
Tampa *	1,595	145	11 : 1	25%
Detroit	3,901	365	11 : 1	19%
Pittsburgh	1,489	146	10 : 1	31%
New Orleans	954	132	7 : 1	25%
Cleveland *	1,893	320	6 : 1	31%
Average	3,946	224	17 : 1	25%
Average without New York	3,100	226	14 : 1	26%
Boston (actual)	4,281	189	23 : 1	27%
Boston	4,281	252 **	17 : 1	27%
Boston	4,281	268 **	16 : 1	27%
Boston	4,281	285 **	15 : 1	27%
Boston	4,281	306 **	14 : 1	27%

* Number of private suites market wide includes those in planned facilities which have not yet been sold.

** Number of private suites is derived by dividing the number of corporations by the various penetration ratios.

Source: Dun & Bradstreet Market Identifiers and facility management.

EXHIBIT 2.2–5
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
PRIVATE SUITE ANALYSIS

Market Wide Suite Total	189 (Fenway, New Boston Garden, Foxboro)
Foxboro Stadium	42
Market Wide Suites w/o Foxboro	147

Market Wide Suite Potential Assuming:	**Potential Market Wide Suites**	**Potential Suites for New Stadium**
17:1 Company/Suite Ratio	252	105
16:1 Company/Suite Ratio	268	121
15:1 Company/Suite Ratio	285	138
14:1 Company/Suite Ratio	306	159

Source: Coopers & Lybrand

EXHIBIT 2.2–6
MASSACHUSETTS STADIUM / EXHIBITION FACILITIES ANALYSIS
SELECTED SPORTS FACILITIES MARKETS
CLUB SEAT CORPORATE PENETRATION ANALYSIS

METRO AREA	COMPANIES WITH REVENUE > $5 MIL	CLUB SEATS MARKET WIDE	RATIO OF COMPANIES TO CLUB SEATS	% OF COMPANIES WITH REVENUE > $25 MIL
Detroit	3,901	2,000	1.95 :1	32%
Chicago	6,739	4,960	1.36 :1	25%
Denver *	2,100	1,606	1.31 :1	24%
Kansas City	1,223	2,000	0.61 :1	32%
Houston	4,467	8,000	0.56 :1	30%
Atlanta	3,454	9,094	0.38 :1	27%
Tampa *	1,595	4,500	0.35 :1	25%
Washington, D.C. *	4,163	15,046	0.28 :1	26%
Miami	2,564	9,279	0.28 :1	20%
Phoenix	1,795	6,700	0.27 :1	22%
Average	3,200	6,319	0.50 :1	26%
Boston	4,281	8,562 **	0.50 :1	27%
Typical Market Range:				
Boston	4,281	5,708 ***	0.75 ***	27%
Boston	4,281	6,586 ***	0.65 ***	27%
Boston	4,281	7,784 ***	0.55 ***	27%
Boston	4,281	9,513 ***	0.45 ***	27%

* Number of club seats market wide currently includes those in planned facilities which have not yet been sold.

** Club seats is derived by dividing 4,281 by the average ratio of companies to club seats.

*** Number of club seats derived by dividing the number of corporations by the various penetration ratios.

Source: Dun & Bradstreet Market Identifiers and facility management.

EXHIBIT 2.2–7
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
SELECTED SPORTS FACILITIES MARKETS
CLUB SEAT POPULATION PENETRATION ANALYSIS

METRO AREA	POPULATION	CLUB SEATS MARKET WIDE	RATIO OF POPULATION TO CLUB SEATS	% OF COMPANIES WITH REVENUE > $25 MIL
Detroit	4,673,000	2,000	2,337 :1	19%
Denver *	1,860,000	1,606	1,158 :1	24%
Chicago	6,077,000	4,960	1,225 :1	25%
Kansas City	1,236,000	2,000	618 :1	32%
Tampa *	2,110,000	4,500	469 :1	25%
Houston	3,742,000	8,000	468 :1	30%
Miami	3,241,000	9,279	349 :1	20%
Phoenix	2,170,000	6,700	324 :1	22%
Atlanta	2,915,000	9,094	321 :1	27%
Washington, D.C. *	3,988,000	15,046	265 :1	26%
Average	3,201,200	6,319	507 :1	25%
Boston (actual)	3,791,000	3,286	1,154 :1	27%
Boston	3,791,000	7,483 **	507 :1	27%
Boston	3,791,000	3,991 ***	950 :1	27%
Boston	3,791,000	5,055 ***	750 :1	27%
Typical Market Range:				
Boston	3,791,000	5,832 ***	650 :1	27%
Boston	3,791,000	6,893 ***	550 :1	27%
Boston	3,791,000	8,424 ***	450 :1	27%
Boston	3,791,000	9,478 ***	400 :1	27%

* Number of club seats market wide includes those in planned facilities which have not yet been sold.

** Club seats is derived by dividing the population by the average penetration.

*** Number of club seats derived by dividing the population by the various penetration ratios.

Source: Dun & Bradstreet Market Identifiers and facility management.

EXHIBIT 2.2–8
MASSACHUSETTS STADIUM/EXHIBITION FACILITIES ANALYSIS
CLUB SEAT ANALYSIS

Market Wide Club Seat Total 2,900 (Fenway and New Boston Garden)

Market Wide Suite Potential Assuming:	**Potential Market Wide Club Seats**	**Potential Club Seats for New Stadium**
450:1 Population/Club Seat Ratio	8,424	5,524
400:1 Population/Club Seat Ratio	9,478	6,578

Source: Coopers & Lybrand

It should be noted that the analysis outlined above for general seating, private suites and club seats is based solely on a comparable market ratio methodology. Specific corporate and fan spending characteristics, team performance and other such factors, which have not been measured as a part of this analysis, could significantly impact the seating, suite and club seat estimates.

Fixed Seating Event Summary

The potential event levels for a professional sports stadium located in the Commonwealth are comparable to other such venues around the country. Some unique event types have been identified in this analysis (i.e. Rodeo/Western events), and others will likely be generated as the facility continues to operate.

As part of this analysis, we have also considered the interaction between the New Boston Garden and a potential new stadium development. In general, there is a distinction between events suitable for stadium venues and arena facilities. For example, concerts that tend to play in arenas differ significantly from those concerts that play in larger stadiums. Similarly, the majority of family shows require a more intimate setting and are more likely to use arenas than stadiums. As a result, we do not expect an impact on event estimates for the proposed stadium as a result of the New Boston Garden. Similarly, there should be no significant impacts from the development of a new stadium facility on the event levels at the New Boston Garden.

Finally, in terms of facility location, our analysis of event organizer preferences does not point to any of the specific sites which remained under consideration for a stadium only development as a result of the screening process (See Volume II) as being significantly superior to others in terms of attracting events. Event organizers noted that one of their primary concerns focused on the availability of strong population base within the general area. Unlike the convention and trade show industry, adjacent or nearby hotel and other visitor attractions are not a primary consideration. As a result, a stadium only development could be successful in generating event levels comparable to other professional sports facilities at each of the short-listed sites throughout the Commonwealth.

3. Financial Operating Analysis

This section provides an analysis of the potential operating results of a proposed megaplex facility and a stand alone convention center in Boston/Cambridge, and a stadium only configuration in various locations throughout the state. The analysis of the potential operating results is based on the data presented in the market analysis set forth in Section 2 of this report, and on the key assumptions described within this section. The presentation of this section is broken down into four categories as follows:

3.1 Overview of Financial Operating Analysis

3.2 Analysis of the Megaplex and Convention Center Revenues & Expenses

3.3 Analysis of the Stadium Only Revenues & Expenses

3.4 Summary of Potential Operating Results

3.1 Overview of Financial Operating Analysis

The market analysis outlined in the previous section and the financial analysis outlined below are designed to assist State representatives in evaluating the future development of public assembly facilities within the Commonwealth.

As the facility development options set forth in this report are in the initial planning stage, and the final design, configuration and facility program have not been developed, the revenue and expense assumptions used in this analysis are based on the results of the market analysis, the general building components, industry trends and financial results from comparable facilities. More detailed physical development planning must be completed before more precise estimations of facility operating results can be made. Also, upon completion of preliminary planning, revenue and expense assumptions should be reviewed to reflect changes to assumptions made herein. These changes could significantly affect the analysis of future operating results.

As previously stated, this presentation is designed to assist representatives of the Executive Office of Economic Affairs and Division of Capital Planning and Operations in determining the financial effects of the proposed project and cannot be considered to

be a presentation of expected future results. Accordingly, this analysis of potential operating results may not be useful for any other purpose. The assumptions disclosed herein are not all inclusive, but are those deemed to be significant; however, there will be differences between estimated and actual results, because events and circumstances frequently do not occur as expected, and these differences may be material. The operating results estimated in this report are similar to operating results of comparable facilities throughout the country. Also, these operating figures do not include an annual contribution to a reserve account for capital expenditures. Based on the experience of other facilities, this annual reserve contribution is typically approximately one half of one percent of construction costs.

As in all studies of this type, the estimated results are based on competent and efficient management of the proposed facilities and assume that no significant changes in the various event markets will occur beyond those set forth in this report. In addition, the estimates below assume that adequate hotel space to accommodate event attendees will be available.

3.2 Analysis of Megaplex and Convention Center Revenues & Expenses

As outlined in the market analysis, a total of 400,000 to 500,000 square feet of contiguous exhibition space could be supported in the Boston metropolitan area from a market perspective. In addition, the fixed seating component of the megaplex will house approximately 70,000 seats and an additional 180,000 square feet of floor space suitable for use as exhibition space. In preparing this financial analysis, all convention and trade show event activity estimated within the market section of this report is assumed to take place in a convention center or megaplex development.

The revenues and expenses associated with facility operations will be generated from exhibition events, as well as fixed seating sports and other events for the megaplex development. Both the revenue and expense estimates are based on a mature year of facility operations, and are stated in 1998 dollars. Each of the event components are discussed below.

Exhibition Space Related Revenue

The utilization of the exhibition space component of the facility will include conventions and tradeshows, public shows, local events, and other events. As outlined in the market analysis section of this report, a stand alone convention center development will likely attract slightly fewer events relative to a megaplex facility. This is primarily due to the additional exhibition space available at a megaplex from the

stadium floor. The various revenues generated as a result of exhibition space event activity are detailed below.

Rental Revenue

Rental revenues are based on the event, attendance, square footage, and growth rate estimates outlined in the market analysis. The resulting facility square foot utilization levels are multiplied by specific facility rental rates. Rates for primary exhibition space users total approximately $1.20 per square foot per event in 1998 dollars. In addition to the major exhibition hall events, convention center or megaplex development will likely accommodate numerous other smaller meeting/seminar events. We have assumed a flat fee rental charge for these events of approximately $285 per event day in 1998 dollars.

Based on industry standards and historical data obtained from comparable facilities, the rental revenue for events held in a megaplex that utilize exhibition/ meeting space is estimated to be approximately $4,863,000. A stand alone convention center is estimated to generate approximately $4,195,000 in rental revenue. It is assumed that rental rates will increase three percent annually.

Food Service Revenue

Food service revenue for conventions and trade shows consist of catering, concession, and various other food and beverage charges. Revenue assumptions are based on the estimated event and attendance levels presented in the market analysis, as well as discussions with show organizers and historical data obtained from comparable facilities. For purposes of this analysis, we have assumed average net per-capita food and beverage revenue of approximately $8.20 per event day for exhibition space events, and approximately $2.00 per event day for smaller meeting events. The percentage of food service revenue allocated to facilities around the country varies based upon the type of service. That is, concessions margins are different from catering margins which are also different from other food and beverage revenues. In this analysis, we have used an overall average of 22.5 percent of food service revenue allocated to the megaplex. The average gross revenue for a megaplex is estimated at approximately $2,391,000 in 1998 dollars, and is assumed to increase four percent annually. A stand alone convention center is estimated to generate approximately $2,146,000 in food service revenue in 1998 dollars.

Event Service Revenue

Event service revenues include special services related to the operation of the facility, including event set-up, security, electrical, production services, equipment rental and other such revenue. These revenues are based on industry standards and historical revenues at comparable facilities and are estimated to be approximately $8.90 per square foot of exhibition space in 1998 dollars. Total contract service revenue is estimated to be approximately $3,986,000 in 1998 dollars for a megaplex, and $3,596,000 for a stand alone convention center. Revenues are assumed to increase four percent annually.

Parking Revenue

Parking revenue estimates are based on the event and attendance data developed in the market analysis. In addition, the analysis assumes a per-car parking charge of approximately $5.00 in 1998 dollars, and an average of 3 persons per car. Total parking revenue is estimated at approximately $616,000 for the convention center component of a megaplex, and approximately $559,000 at a stand alone convention center.

Fixed Seating Related Revenue - Megaplex Only

Unlike the exhibition component of a megaplex, the fixed seating facility is assumed to have a professional football team as a primary tenant. Other uses of the fixed seating component of the megaplex are based on the market analysis and include concerts, motor sports, and other such events. In evaluating the revenue potential of the fixed seating component of the megaplex, we first estimated the gross spending revenue associated with the various event types. Later in this section, we have made various specific assumptions as to the percentages of this gross revenue allocated to the facility operator.

Gate Receipts Revenue

Ticket revenue related to the fixed seating configuration consists of gate receipts from NFL games, concerts and other such events. It is assumed in the market analysis section of this report that the fixed seating portion of the megaplex could potentially host 17 to 22 events, excluding NFL games. Exhibit 3.2-1 presents the estimated gross ticket revenue generated through gate receipts. Ticket prices are assumed to grow five percent annually. These estimates are based on the event and attendance levels presented in the market analysis section of this report.

Exhibit 3.2–1
Megaplex Development
Calculation of Fixed Seating Gross Operating Revenue
1998 Dollars

Ticket Revenue	Events	Ticket Price	Average Attendance	Gross Revenue
NFL (1)	10	$38.40	59,500	$22,848,000
Concerts	4	$37.50	45,000	6,750,000
Motor Events	2	$17.40	25,000	870,000
College Football	2	$6.90	5,000	69,000
High School Football	3	$6.80	5,000	102,000
Soccer	2	$4.30	5,000	43,000
Public Shows	2	$6.70	15,000	201,000
Other	6	$13.20	12,000	950,000
Total 1998 Ticket Revenue				**$31,833,000**

Concessions & Novelties	Events	Combined Per Capita	Average Attendance	Gross Revenue
NFL (1)	10	$8.16	56,500	$4,611,000
Concerts	4	$13.80	45,000	2,484,000
Motor Events	2	$8.10	25,000	405,000
College Football	2	$3.60	5,000	36,000
High School Football	3	$3.60	5,000	54,000
Soccer	2	$2.80	5,000	28,000
Public Shows	2	$3.90	15,000	117,000
Other	6	$6.40	12,000	461,000
Total 1998 Concessions & Novelty Revenue				**$8,196,000**

(1) The lower average attendance for concession and novelty revenue calculations are based on an industry average 5 percent no–show estimate. This reflects the fact that traditionally, approximately 5 percent of the total paid attendees does not actually attend the game.

Source: Coopers & Lybrand

Concessions & Novelties Revenue

It is assumed that concessions will be operated by independent vendors. As with other standard public assembly facility concession operations, we have assumed a cost of operations of approximately 55 percent. Traditionally, the remaining 45 percent is allocated to the facility operator and/or the building tenant for the specific event from which the concession spending is generated.

In calculating novelty revenue, cost of operations is assumed to be approximately 75 to 80 percent of gross revenue. As with concession revenue, the remaining 20 to 25 percent is traditionally allocated to the facility operator and/or the building tenant for the specific event from which the concession spending is generated.

Exhibit 3.2-1 presents the gross concession and novelty revenue estimated for the megaplex. Concessions and novelty revenues are assumed to grow between four and five percent annually. Later in this section, we discuss the percentages of these gross revenues which could be allocated to the facility operator.

The estimates of concession and novelty revenue were generated from NFL average per capitas adjusted for local area conditions. The concession and novelty revenue generated for other events was based on industry-wide average per capitas and discussions with event promoters.

Parking Revenue

Parking revenue for the megaplex facility is based on the event and attendance levels presented in the market analysis. In addition, the analysis assumes a per-car parking charge ranging from $5.00 to $8.05 in 1998 dollars, depending on event type has been assumed with an average of 3 persons per car. Total parking revenue related to the fixed seating component of the proposed megaplex is estimated at approximately $1.035 million.

Premium Seating Revenue

Premium seating revenue consists of revenues generated from the leasing of private suites and club seats. In estimating the premium seating revenue, it is assumed the fixed seating component of the megaplex will contain approximately 120 private suites and 5,000 club seats. The average price for the suites is assumed to be approximately $45,500 per suite and the price for the club seats is expected to be approximately $650 per seat in 1998 dollars. This pricing level was established in an attempt to approximate the Boston market's ranking among other NFL cities. For comparison purposes we have prepared Exhibits

3.2-2 and 3.2-3 which are expressed in 1992 dollars. All premium seating leases are assumed to be subject to effective annual increase of four percent. Actual premium increase will likely be tied to specific lease terms, renewing on a 3 to 5 year basis. These exhibits present premium seating data on comparable facilities throughout the NFL. As outlined in the Exhibits, the potential suite revenue assumed to be generated by this project totals approximately $3,780,000 in 1992 dollars, ranking 10th in the NFL. Similarly, assumed club seating revenue for the megaplex ranks 4th among the stadiums offering club seating. These assume lease percentages of 90 and 85 percent, respectively.

For purposes of this analysis, we have also included per-game suite sales as revenue from the sale of a suite for a single game. Total annual per-game suite revenue, in 1998 dollars is estimated at approximately $481,000.

Total suite revenue, including per-game sales, is estimated at approximately $5.3 million, with club seat revenue estimates totaling approximately $2.8 million, both in 1998 dollars.

Advertising Revenue

The advertising revenue is estimated to be approximately $2.5 million in 1998, escalating annually at a rate of four percent. The advertising total is based on comparative data from stadium facilities in the NFL.

Gross Revenue Allocations

The analysis outlined above serves to estimate the gross operating revenue which could be generated as a result of megaplex and convention center operations. Traditionally, the stadium and franchise related revenue components can be allocated to various parties including facility operators, building tenants and various service contractors. Within Exhibit 3.2-4, we have developed a set of allocation percentages which could be applied to the gross revenue totals. For purposes of this analysis, we have developed three specific scenarios for the allocation of these gross revenues to the facility operator. It is necessary to present various scenarios due to the fact that the lease agreement, critical to the allocation of revenues, can only take a hypothetical form at this early stage of project discussion. The three specific scenarios reflect the wide range of lease agreements found in the NFL today, although none could be characterized as a standard agreement. The specific scenarios presented include Scenario 1, representing a lease structure more favorable to the NFL franchise, Scenario 2 reflecting a more neutral set of lease terms and Scenario 3 reflecting a lease agreement which is more favorable to the facility operator. As outlined in the Exhibit, a stand alone convention center, which does not contain a fixed seating component, is not affected by the lease agreement scenarios.

EXHIBIT 3.2–2
PRIVATE SUITES – NATIONAL FOOTBALL LEAGUE STADIUMS
RANKED BY ESTIMATED PREMIUM RECEIPT

TEAM	MKT. RANK	FACILITY	YEAR BUILT	LEASEABLE SUITES	PRICE PER YEAR PER SUITE	ESTIMATED PREMIUM	ESTIMATED PREMIUM RECEIPT	TICKETS INCLUDED	% LEASED
Philadelphia Eagles	5	Veterans Stadium	1971	141 (1)	$50,000 – $175,000	$80,000	$10,152,000	NFL & MLB & TEMPLE U.	90%
Atlanta Falcons	12	Georgia Dome	1992	203	$20,000 – $120,000	$45,500	$9,237,000	NFL	100% (2)
New York Giants/Jets	1	Giants Stadium	1976	72	$106,000	$106,000	$7,632,000	NONE	100%
Chicago Bears	3	Soldier Field	1924	116	$60,000 – $75,000	$62,000	$7,192,000	NFL	100%
Miami Dolphins	11	Joe Robbie Stadium	1987	215	$ 29,000 – $65,000	$47,000	$6,568,000	NONE	65%
Cleveland Browns	13	Municipal Stadium	1931	108	$43,000 – $59,000	$45,000	$4,860,000	NFL & MLB	100%
San Francisco 49'ers	4	Candlestick Park	1960	81	$30,000 – $73,000	$54,000	$4,155,000	NFL	95%
New Orleans Saints	24	Louisiana Superdome	1975	132	$18,000 – $40,000	$29,000	$3,828,000	NONE	100%
Dallas Cowboys	8	Texas Stadium	1971	70 (3)	$25,000 – $100,000	$57,000	$3,791,000	NFL	95%
New England Patriots	**9**	**Proposed Megaplex**	**Proposed**	**120**	**$35,000**	**$35,000**	**$3,780,000**	**NONE**	**90%**
Pittsburgh Steelers	17	Three Rivers Stadium	1970	115	$50,000	$29,000	$3,335,000	NFL & MLB	100%
Minnesota Vikings	16	Metrodome	1982	115	$48,000 – $61,000	$49,000	$3,212,000	NFL	57%
Los Angeles Rams	2	Anaheim Stadium	1966	108	$24,000–$40,000	$27,000	$2,770,000	NFL & MLB	95%
Phoenix Cardinals	18	Sun Devil Stadium	1958	60	$52,000	$52,000	$2,746,000	NONE	88%
Denver Broncos	20	Mile High Stadium	1948	58	$50,000 – $88,000	$55,000	$2,552,000	NFL	80%
Tampa Bay Buccaneers	19	Tampa Stadium	1967	57	$45,000 – $80,000	$46,000	$2,360,000	NFL	N/A
San Diego Chargers	15	Jack Murphy Stadium	1967	79	$25,000 – $50,000	$33,000	$2,346,000	NFL	N/A
Houston Oilers	10	Astrodome	1965	110	$20,000 – $45,000	$21,000	$2,195,000	NFL	95%
Seattle Seahawks	14	Seattle Kingdome	1976	48	$50,000 – $80,000	$56,000	$2,150,000	NFL & MLB	80%
Indianapolis Colts	23	Hoosier Dome	1983	96	$15,000 – $36,000	$22,000	$2,112,000	NONE	100%
Kansas City Chiefs	22	Arrowhead Stadium	1972	80	$17,000 – $51,000	$24,000	$1,743,000	NONE	N/A
Green Bay Packers	26	Lambeau Field	1957	102	$15,000 – $20,000	$16,000	$1,632,000	NONE	100%
Detroit Lions	6	Pontiac Silverdome	1975	102	$27,600	$27,600	$1,520,000	NONE	54%
Buffalo Bills	25	Rich Stadium	1973	50	$12,500 – $32,000	$22,000	$1,100,000	NONE	100%
Cincinnati Bengals	21	Riverfront Stadium	1970	20	$25,000	$25,000	$500,000	NONE	100%
Washington Redskins	7	RFK Stadium	1961	0	n/a			n/a	n/a
Los Angeles Raiders	2	Memorial Coliseum	1923	0	n/a			n/a	n/a
Average without proposed Megaplex							$3,761,000		
Median without proposed Megaplex							$2,552,000		

N/A = Not Available
n/a = not applicable

(1) **89 of the suites are controlled by the Eagles and 52 are controlled by the Phillies.**

(2) **Facility management represents that signed commitments and deposits have been obtained for 100% of these suites. The deposit is composed of the first and last years rent payment.**

(3) **225 private suites were sold outright, 70 are available for lease.**

Source: **NFL offices, stadium management and industry periodicals. November 1992**

EXHIBIT 3.2–3

CLUB SEATS – NATIONAL FOOTBALL LEAGUE STADIUMS RANKED BY ANNUAL PREMIUM AMOUNT

TEAM	MKT. RANK	FACILITY	YEAR BUILT	NO. OF SEATS	ESTIMATED PRICE PER YEAR	ESTIMATED PREMIUM	ESTIMATED PREMIUM RECEIPTS	TICKETS INCLUDED	% LEASED
Miami Dolphins	11	Joe Robbie Stadium	1987	9,279	$800 – $1,400	$820	$6,467,000	NFL	85%
Atlanta Falcons	12	Georgia Dome	1992	6,300	$1,000 – $1,800	$1,000	$4,788,000	NFL	76% (1
Phoenix Cardinals	18	Sun Devil Stadium	1958	5,000	$600 – $2,000	$850	$2,975,000	NFL	70%
New England Patriots	**9**	**Proposed Megaplex**	**Proposed**	**5,000**	**$510**	**$510**	**$2,168,000**	**NONE**	**85%**
Denver Broncos	20	Mile High Stadium	1948	1,606	$1,450	$1,000	$1,445,000	NFL	90%
Green Bay Packers	26	Lambeau Field	1957	1,920	$480 (2)	$320	$614,000	NFL	100%
Houston Oilers	10	Astrodome	1965	8,000	$350	$0	$0	NFL	90%
Buffalo Bills	25	Rich Stadium	1973	6,878	$350	$0	$0	NFL	100%
Kansas City Chiefs	22	Arrowhead Stadium	1972	2,000	$435	$0	$0	NFL	100%

N/A = Not Available

(1) Facility management represents that signed commitments and deposits have been obtained for 76% of the club seats. The deposit is composed of the first and last years rent payment.

(2) The Packers play 6 home games at Lambeau Field.

Source: NFL Team Offices, Stadium Management, and Industry Periodicals. November 1992

Exhibit 3.2–4
Megaplex/Convention Center Development
Summary of Revenue Allocation to Facility Operators

	Scenario 1	Scenario 2	Scenario 3
Megaplex and Convention Center			
Exhibition Space Related:			
Rental	100.00%	100.00%	100.00%
Food and beverage	100.00%	100.00%	100.00%
Contract service	100.00%	100.00%	100.00%
Parking, net	100.00%	100.00%	100.00%
Megaplex Only			
Fixed Seating Related:			
NFL Events			
Ticket	0.00%	5.00%	10.00%
Food and beverage	0.00%	11.25%	22.50%
Novelty	0.00%	6.25%	12.50%
Parking, net	0.00%	50.00%	100.00%
Other Events:			
Ticket	10.00%	10.00%	10.00%
Food and beverage	45.00%	45.00%	45.00%
Novelty	25.00%	25.00%	25.00%
Parking, net	100.00%	100.00%	100.00%
Luxury Amenities:			
Suites	0.00%	50.00%	100.00%
Preferred seats	0.00%	50.00%	100.00%
Other Revenue Sources:			
Advertising	0.00%	25.00%	50.00%

Source: Coopers & Lybrand

Within Exhibit 3.2-5, we use the gross operating revenue data applied to the allocation percentages in order to estimate the total facility base operating revenue which could be generated by the facility in 1998 dollars.

Megaplex and Convention Center Related Expenses

Expenses for the exhibition facilities are measured on a per gross square foot of exhibition space basis. Based on the market analysis, a total of 400,000 to 500,000 square feet of dedicated exhibition space has been recommended. For purposes of the financial analysis it assumes a total of 450,000 square feet within the exhibition hall, in addition to approximately 180,000 square feet of space for exhibits in the fixed seating space for the megaplex development. The expense estimates are presented in 1998 dollars and assume an annual rate of increase of four percent.

Salaries and Wages

Salaries and wages are estimated on the basis of the historical salary expenses of comparable facilities and industry standards. Total salaries and wages are estimated on the assumption of both full-time and part-time rates, and that part-time employees are generally employed to help service special events. Salaries and wages including benefits for a convention center or a convention component of a megaplex are estimated to be approximately $10.60 per square foot or $4.77 million. Salaries and wages for the stadium component are estimated at approximately $2.75 million.

It should be noted that our analysis of the market demand and financial operating results assumes that both the megaplex and the convention center project will be staffed with personnel levels similar to those of other first-class, professionally managed public assembly facilities. While cost savings could be experienced with lower staff levels in areas such as management and marketing, less staff in these areas could result in a negative impact on the number of events booked in the facility and the quality of service provided to events.

Utilities

Based on comparable facilities and historic information, utilities expense for a convention center or a convention component of a megaplex is estimated at an average annual rate of approximately $5.50 per square foot or $2.48 million. Utilities expense for the stadium component are estimated at approximately $1.6 million.

Exhibit 3.2–5
Megaplex and Convention Center Development
Operating Income Summary
Base Year of Operations in 1998 Dollars

	Total Revenues (1)	Scenario 1 (2)	Scenario 2 (2)	Scenario 3 (2)
Stand Alone Convention Center				
Exhibition Space Related:				
Rental	$4,195,000	$4,195,000	$4,195,000	$4,195,000
Food and beverage	2,146,000	2,146,000	2,146,000	2,146,000
Contract service	3,596,000	3,596,000	3,596,000	3,596,000
Parking	559,000	559,000	559,000	559,000
Total Convention Center Revenue	**$10,496,000**	**$10,496,000**	**$10,496,000**	**$10,496,000**
Megaplex				
Exhibition Space Related:				
Rental	$4,863,000	$4,863,000	$4,863,000	$4,863,000
Food and beverage	2,391,000	2,391,000	2,391,000	2,391,000
Contract service	3,986,000	3,986,000	3,986,000	3,986,000
Parking	616,000	616,000	616,000	616,000
Fixed Seating Related:				
NFL Events				
Ticket	22,848,000	0	1,142,000	2,285,000
Food and beverage	3,230,000	0	363,000	727,000
Novelty	1,381,000	0	86,000	173,000
Parking	342,000	0	171,000	342,000
Other Events:				
Ticket	8,985,000	899,000	899,000	899,000
Food and beverage	1,391,000	626,000	626,000	626,000
Novelty	2,194,000	549,000	549,000	549,000
Parking	693,000	693,000	693,000	693,000
Luxury Amenities:				
Suites	5,264,000	0	2,632,000	5,264,000
Preferred seats	2,763,000	0	1,382,000	2,763,000
Other Revenue Sources:				
Advertising	2,500,000	0	625,000	1,250,000
Fixed rental payment (3)		1,500,000	0	0
Total Megaplex Revenue	**$63,447,000**	**$16,123,000**	**$21,024,000**	**$27,427,000**

Source: Coopers & Lybrand

(1) Base year amounts reflect total revenues from various sources during a mature year of facility operations in 1998 dollars.

(2) The specific terms of lease agreements throughout the NFL vary significantly. As such, there is no standard or industry average lease agreement. We have therefore presented three general lease scenarios, each of which have been implemented to some degree throughout the League. Scenario 1 reflects lease terms more favorable to the NFL franchise, Scenario 2 reflects a more neutral set of lease terms, and Scenario 3 reflects lease terms which may be more favorable to the facility operator.

(3) As part of the Scenario 1 lease summary, the franchise would pay the stadium operator a lump sum rental while receiving all facility operating revenue.

Repairs and Maintenance

The repairs and maintenance expense estimates for the for a convention center or a convention component of a megaplex are based on the historical repairs and maintenance expense of comparable facilities and industry standards. It is assumed that repairs and maintenance expense will be approximately $6.80 per square foot or $3.06 million. Repairs and maintenance expense for the stadium component are estimated at approximately $400,000.

General, Administrative, Materials and Supplies

General, administrative, materials and supplies expense assumptions are based on industry standards and historical data obtained from comparable facilities. These expenses are estimated at a rate of approximately $1.10 per square foot or $495,000. General, administrative, materials and supplies expense for the stadium component are estimated at approximately $880,000 .

Advertising and Promotions

Conventions and trade shows are usually booked several years in advance. Advertising and promotions expense is estimated at an average annual rate of approximately $2.10 per square foot of exhibition space or approximately $945,000 for either a megaplex or a convention center. The advertising set forth herein relates only to marketing performed directly for megaplex and convention center development. It is expected that a large portion of advertising and promotion expenses will come from other marketing efforts of the Boston Convention & Visitors Bureau.

Contractual Services

Contractual services consist of those services necessary for the operation of the facility, including necessary event day services. Based on an analysis of comparable facilities, contractual services costs are estimated to be approximately $9.75 per square foot of exhibition space or $4.39 million for either a megaplex or a convention center.

Insurance

The insurance expense for a convention center or a convention component of a megaplex estimate is based on historic insurance expenses of comparable facilities. Insurance expense is estimated to be $2.10 per square foot or $945,000. Insurance expense for the stadium component are estimated at approximately $375,000.

Other Operating Costs

Other operating expenses include office supplies, automobile allowances, and other expenses. Other operating expenses are estimated to be approximately $4.00 per square foot of exhibition space or $1.8 million for a either a convention center or megaplex.

3.3 Analysis of Stadium Only Revenues & Expenses

The stadium only project, domed and/or open air, is assumed to house a total of 70,000 seats. In addition, a domed facility would provide for approximately 180,000 square feet of floor space suitable for some exhibition events. The revenues and expenses generated from the stadium only configuration are assumed to be generated from NFL games, concerts and other events. A domed stadium is expected to attract a higher level of event usage, as compared to an open air facility. However, an open-air stadium would likely generate lower operating costs as compared to a domed facility. The revenues and expenses presented below reflect these specific facility characteristics, and are based on a mature year of facility operations in 1998 dollars. Each of the revenue and expense components are discussed in detail below.

Stadium Operating Revenue

Gate Receipts Revenue

Ticket revenue estimates for a stadium only development consist of the facility's share of gate receipts from NFL games, concerts and other such events. It is assumed in the market analysis section of this report that a domed stadium facility could potentially host 17 to 22 events excluding NFL games. Potential event levels at an open air stadium have been estimated at approximately 13 to 17 excluding NFL games. The estimated ticket revenue generated for the fixed seating segment is based on industry average attendance levels and the average attendance levels at comparable facilities. Ticket prices are assumed to grow five percent annually.

Concessions & Novelties Revenue

The concession and novelty revenue estimates for a domed stadium are not expected to change from the estimates prepared for the megaplex operations. As outlined earlier, it has been assumed that the concessions will be operated by

independent vendors. It has been assumed that the concessionaire would retain approximately 55 percent of gross sales with the remaining 45 percent being allocated to the stadium/tenant. In calculating novelty revenue, cost of operations is assumed to be approximately 75 to 80 percent of gross revenue. The remaining concession and novelty revenue is traditionally allocated between facility operator and/or the building tenant.

Premium Seating Revenue

As with the megaplex development, a domed or open air stadium located in the Boston/Cambridge area is estimated to generate approximately $8 million in premium seating revenue. However, as the facility site changes throughout the Commonwealth, some changes in the luxury seating market are expected. Based on discussions with corporate representatives in Boston, Hartford, Providence and Springfield, we expect an approximate range of 15 - 30 percent reduction in premium seating revenue at stadium sites outside the Boston/Cambridge area. This reduction reflects a potential decrease in the market absorption of the suites and club seats, as well as a lower premium likely to be paid for the amenities.

Advertising Revenue

The advertising revenue for a domed stadium is estimated at approximately $2 million, escalating annually at a rate of four percent. Open air stadiums generally offer slightly less opportunity for the placement of sellable advertising space. As a result, advertising revenue potential at an open air stadium is estimated at approximately $1.77 million. The advertising totals are based on comparative data from similar type facilities in the NFL.

Gross Revenue Allocation

As with the megaplex operations, we have made various assumptions as to the allocation to the stadium operator of the gross facility operating revenue. These assumptions hold for both a domed and open air stadium. These allocations are reflected in three specific scenarios. Scenario 1 represents a lease agreement between the facility operators and the primary tenant that is more favorable to the NFL franchise. The second scenario reflects a more neutral set of lease terms, while Scenario 3 reflects a lease agreement which is more favorable to the facility.

The various allocation percentages which are applied to the gross revenues to estimate the stadium only facility operating revenues are assumed to remain the same as those outlined for the megaplex development. The resulting allocation of domed and open air stadium operating revenues is presented in Exhibits 3.3-1 and 3.3-2.

Stadium Operating Expenses

Expense estimates are presented in 1998 dollars, and assume an annual four percent increase.

Salaries & Wages

Salaries and wages are estimated on the basis of the historical salary expenses of comparable facilities and industry standards. Total salary and wages are estimated based on the assumption of both full-time and part-time rates and that part-time employees are generally employed to help service special events. Salaries and wages are estimated to be approximately $3.1 million for a domed facility, and $2.0 million for an open air stadium.

General and Administrative

General and administrative expenses include expenses associated with the operation of a stadium facility, such as telephone expense, postage expense and office supplies. Based on historical general and administrative expenses for comparable facilities and industry standards, first year expenses are estimated to be approximately $1.65 million for a domed facility, and $1.27 million for an open air stadium.

Utilities

Utilities expense primarily consists of electric expense. Also included in this category is gas, oil, steam, water and sewage expense. Utilities for a domed stadium are estimated at approximately $1.9 million in 1998, based on the historical experience of comparable facilities and other industry standards. Given the lower climate control requirements, utility costs for open air stadium are estimated at $1 million.

Exhibit 3.3–1
Stadium Only Development – Domed Stadium
Operating Income Summary
Base Year of Operations in 1998 Dollars

	Total Revenues (1)	Scenario 1 (2)	Scenario 2 (2)	Scenario 3 (2)
Exhibition Space Related:				
Rental	$0	$0	$0	$0
Food and beverage	0	0	0	0
Contract service	0	0	0	0
Parking	0	0	0	0
Fixed Seating Related:				
NFL Events				
Ticket	22,848,000	0	1,142,000	2,285,000
Food and beverage	3,230,000	0	363,000	727,000
Novelty	1,381,000	0	86,000	173,000
Parking	342,000	0	171,000	342,000
Other Events:				
Ticket	8,985,000	899,000	899,000	899,000
Food and beverage	1,391,000	626,000	626,000	626,000
Novelty	2,194,000	549,000	549,000	549,000
Parking	693,000	693,000	693,000	693,000
Luxury Amenities:				
Suites	5,264,000	0	2,632,000	5,264,000
Preferred seats	2,763,000	0	1,382,000	2,763,000
Other Revenue Sources:				
Advertising	2,000,000	0	500,000	1,000,000
Fixed rental payment (3)		1,500,000	0	0
Combined Operating Revenues	**$51,091,000**	**$4,267,000**	**$9,043,000**	**$15,321,000**

Source: Coopers & Lybrand

(1) Base year amounts reflect total revenues from various sources during a mature year of facility operations in 1998 dollars.

(2) The specific terms of lease agreements throughout the NFL vary significantly. As such, there is no standard or industry average lease agreement. We have therefore presented three general lease scenarios, each of which have been implemented to some degree throughout the League. Scenario 1 reflects lease terms more favorable to the NFL franchise, Scenario 2 reflects a more neutral set of lease terms, and Scenario 3 reflects lease terms which may be more favorable to the facility operator.

(3) As part of the Scenario 1 lease summary, the franchise would pay the stadium operator a lump sum rental while receiving all facility operating revenue.

Exhibit 3.3–2
Stadium Only Development – Open Air Stadium
Operating Income Summary
Base Year of Operations in 1998 Dollars

	Total Revenues (1)	Scenario 1 (2)	Scenario 2 (2)	Scenario 3 (2)
Exhibition Space Related:				
Rental	$0	$0	$0	$0
Food and beverage	0	0	0	0
Contract service	0	0	0	0
Parking	0	0	0	0
Fixed Seating Related:				
NFL Events				
Ticket	22,848,000	0	1,142,000	2,285,000
Food and beverage	3,230,000	0	363,000	727,000
Novelty	1,381,000	0	86,000	173,000
Parking	342,000	0	171,000	342,000
Other Events:				
Ticket	8,008,000	801,000	801,000	801,000
Food and beverage	1,101,000	495,000	495,000	495,000
Novelty	2,056,000	514,000	514,000	514,000
Parking	539,000	539,000	539,000	539,000
Luxury Amenities:				
Suites	5,264,000	0	2,632,000	5,264,000
Preferred seats	2,763,000	0	1,382,000	2,763,000
Other Revenue Sources:				
Advertising	1,771,000	0	443,000	886,000
Fixed rental payment (3)		1,500,000	0	0
Combined Operating Revenues	**$49,303,000**	**$3,849,000**	**$8,568,000**	**$14,789,000**

Source: Coopers & Lybrand

(1) Base year amounts reflect total revenues from various sources during a mature year of facility operations in 1998 dollars.

(2) The specific terms of lease agreements throughout the NFL vary significantly. As such, there is no standard or industry average lease agreement. We have therefore presented three general lease scenarios, each of which have been implemented to some degree throughout the League. Scenario 1 reflects lease terms more favorable to the NFL franchise, Scenario 2 reflects a more neutral set of lease terms, and Scenario 3 reflects lease terms which may be more favorable to the facility operator.

(3) As part of the Scenario 1 lease summary, the franchise would pay the stadium operator a lump sum rental while receiving all facility operating revenue.

Repairs and Maintenance

Repairs and maintenance expenses consist of all expenses associated with the operation of the stadium. First year expenses are estimated at approximately $500,000 for both a domed facility and an open air stadium. These expense estimates are based on the historical costs at comparable stadiums and industry standards.

Insurance

Insurance expense includes coverage for property and general liability. Based on historical insurance expense at comparable facilities and industry averages the insurance expense is estimated to be approximately $440,000 for a domed facility, and $290,000 for an open air stadium.

3.4 Summary of Potential Operating Results

The final component of this section presents a combined summary of the operating revenues and expenses estimated for a megaplex development, a stand alone convention center and various stadium development options. These estimates are summarized in Exhibit 3.4-1. As shown in the Exhibit, the annual operating (loss)/ surplus generated at the megaplex under Scenarios 1 through 3 range from a loss of approximately $8.8 million to a surplus of approximately $2.5 million. A stand alone convention center, which is not impacted by various stadium lease scenarios, is estimated to operate at an annual loss of approximately $8.4 million in 1998 dollars.

Under the stadium only operating analysis, domed stadium financial operating results range from a shortfall of approximately $3.3 million to a surplus of $7.7 million. An open air stadium is estimated to operate at levels ranging from an annual shortfall of approximately $1.2 million under a lease more favorable to the franchise, to a surplus of $9.7 million under a stadium lease structured to favor the facility operator. The range of potential operating results indicates the sensitivity of the project's financial performance to the nature of the NFL lease which will be executed. As could be expected, a lease with terms which are more favorable to the teams will result in smaller income streams for the facility operators, and thereby a smaller operating surplus or greater operating deficit for the project. Conversely, a lease with terms which are more favorable to the facility operator will result in greater income streams to the operator, and thereby a greater operating surplus or smaller operating deficit for the project.

Exhibit 3.4–1
Summary of Facility Development Operating Incomes
1998 Dollars

Megaplex Operating Income Analysis

Megaplex Revenues	Scenario 1	Scenario 2	Scenario 3
Exhibition Space Related	$11,856,000	$11,856,000	$11,856,000
Fixed Seating Related	0	1,762,000	3,527,000
Other Event Related	2,767,000	2,767,000	2,767,000
Luxury Amenities Related	0	4,014,000	8,027,000
Other Revenue Sources Related	1,500,000	625,000	1,250,000
Total Megaplex Revenues	$16,123,000	$21,024,000	$27,427,000
Total Megaplex Expenses	$24,889,000	$24,889,000	$24,889,000
Megaplex Operating Income	**($8,766,000)**	**($3,865,000)**	**$2,538,000**

Convention Center Operating Income Analysis

Convention Center Revenue	Scenario 1	Scenario 2	Scenario 3
Rental	$4,195,000	$4,195,000	$4,195,000
Food and beverage	2,146,000	2,146,000	2,146,000
Contract service	3,596,000	3,596,000	3,596,000
Parking	559,000	559,000	559,000
Total Convention Center Revenues	$10,496,000	$10,496,000	$10,496,000
Convention Center Expenses	$18,884,000	$18,884,000	$18,884,000
Convention Center Operating Income	**($8,388,000)**	**($8,388,000)**	**($8,388,000)**

Source: Coopers & Lybrand

Exhibit 3.4 – 1
Summary of Facility Development Operating Incomes
1998 Dollars (continued)

Domed Stadium Operating Income Analysis

Domed Stadium Revenues	**Scenario 1**	**Scenario 2**	**Scenario 3**
Fixed Seating Related	0	1,762,000	3,527,000
Other Event Related	2,767,000	2,767,000	2,767,000
Luxury Amenities Related	0	4,014,000	8,027,000
Other Revenue Sources Related	1,500,000	500,000	1,000,000
Total Domed Stadium Revenue	$4,267,000	$9,043,000	$15,321,000
Domed Stadium Expenses	$7,590,000	$7,590,000	$7,590,000
Domed Stadium Operating Income	**($3,323,000)**	**$1,453,000**	**$7,731,000**

Open Air Stadium Operating Income Analysis

Open Air Stadium Revenues	**Scenario 1**	**Scenario 2**	**Scenario 3**
Fixed Seating Related	0	1,762,000	3,527,000
Other Event Related	2,349,000	2,349,000	2,349,000
Luxury Amenities Related	0	4,014,000	8,027,000
Other Revenue Sources Related	1,500,000	443,000	886,000
Total Open Air Stadium Revenue	$3,849,000	$8,568,000	$14,789,000
Open Air Stadium Expenses	$5,060,000	$5,060,000	$5,060,000
Open Air Operating Income	**($1,211,000)**	**$3,508,000**	**$9,729,000**

Source: Coopers & Lybrand

As noted earlier, slight variations in stadium operating results are expected as the location of the facility varies throughout the state. Exhibit 3.4-2 presents a summary of the operating surplus/(loss) associated with each development option, including data on stadium development within various sites throughout the Commonwealth. As outlined in the Exhibit, stadium development on sites outside of the Boston/Cambridge area result in greater operating losses, or smaller operating surpluses. This is primarily due to expected lower premium suites, advertising and other such stadium revenue sources. One exception to this is noted for Scenario 1. As very few stadium revenue sources are allocated to the stadium operator, changes in the location of the facility have no impact on financial performance.

Furthermore, it should be noted that the financial success of the stadium portion of the project will be directly or indirectly tied to the winning record or competitiveness of an NFL franchise as well as the strength of the local economy. As an example, the market for private suites, club seats, advertising or even the strength of ticket prices will be reflective of the communities image of the team (positive, negative or neutral) and the financial resources of corporations and individuals in the area to participates in the economics of the project.

Rounding

Because certain calculations within the analysis of future operating results are performed in greater accuracy than whole numbers (as presented), rounding adjustments may occur. These amounts are insignificant to the analysis.

Exhibit 3.4–2
State of Massachusetts
Public Assembly Facility Development Analysis
Operating Surplus/Shortfall – 1998 Dollars

	Scenario 1	Scenario 2	Scenario 3
Megaplex			
■ Boston/Cambridge	($8,766,000)	($3,865,000)	$2,538,000
Domed Stadium			
■ Boston/Cambridge	($3,323,000)	$1,453,000	$7,731,000
■ Worcester	($3,323,000)	$512,000	$5,849,000
■ Lynn	($3,323,000)	$757,000	$6,339,000
Open Air Stadium			
■ Boston/Cambridge	($1,211,000)	$3,508,000	$9,729,000
■ Worcester	($1,211,000)	$2,573,000	$7,859,000
■ Lynn	($1,211,000)	$2,818,000	$8,348,000
■ Foxboro	($1,211,000)	$1,995,000	$6,702,000
Convention Center			
■ Boston/Cambridge	($8,388,000)	($8,388,000)	($8,388,000)

Source: Coopers & Lybrand

4. Projection of Economic and Fiscal Benefit

The purpose of this section is to analyze the economic and fiscal benefits related to the development of an exhibition/stadium facility(s) within the Commonwealth of Massachusetts. Specifically, this section focuses on the construction and operation of a stadium only project considering the six sites (Boston [2], Cambridge, Foxboro, Lynn and Worcester), a megaplex development encompassing both exhibition and fixed seating spaces and a stand alone convention center. It has been assumed that the megaplex and the stand alone convention center would be located within the Boston/Cambridge area. This section is divided into five categories as follows:

4.1 Overview of Economic Impact Concepts

4.2 Analysis of the Facility Construction Impacts

4.3 Analysis of Megaplex and Stand Alone Convention Center Development

4.4 Analysis of Stadium Only Development

4.5 Summary of Project Fiscal or Tax Impacts

4.1 Overview of Economic Impact Concepts

The construction and operation of any facility has an economic effect on the local, state and regional economies. For example, facility construction activity increases employment for those working directly on the project and for those firms which supply related construction materials. Facility operation increases employment for those working to service event attendees and also for those firms which provide operating supplies.

Typically, and for purposes of this report, the **economic impacts** are characterized in terms of changes in the economic base, and are conveyed through measures of direct spending, total output, employment and earnings. The **fiscal impacts** denote change in tax revenue. Tax revenue can be generated in the form of sales and meals tax (sales tax), income tax, hotel/motel tax and other such sources. There are also other effects

which are generated through these types of projects that can only be described qualitatively, such as the quality of life. Both tangible and intangible impacts can be considered as part of the return on investment for this type of project.

When considering the economic impacts related to the proposed developments, the characteristics of the construction and operation of the facilities are distinct and separate. This is due to the nature and timing of the economic impact generated from their distinct activities. The construction period represents a one time impact on the economy. The impacts generated from the construction of a facility occur over the term of the construction period. Therefore, once construction is completed, the impacts associated with the construction of the facility cease to exist. Conversely, the economic impact generated during the operational phase of the project are ongoing impacts, typically qualified in terms of annual impacts on the economy. Therefore, in reviewing the economic impact associated with facilities considered in this report, the impacts generated from facility operations represent the greatest potential for ongoing economic change to the local and state economy.

Economic impact totals are generally discussed in terms of their direct, indirect, and induced effects on the area economy. Each is discussed in more detail below:

- Direct effects are the primary economic benefits directly generated by the construction and operation of a facility. For purposes of this analysis, the direct effects encompass facility construction, convention, fixed seating and team related expenditures.

- Indirect effects consist of the re-spending of the initial or direct expenditures. These indirect impacts extend further as the dollars constituting the direct expenditures continue to change hands. This process, in principle, could continue indefinitely. However, recipients of these expenditures may spend all or part of it on goods and services outside the area, put part of these earnings into savings, or pay taxes. Those activities which remove the earnings from the re-spending cycle halt the process of subsequent expenditure flows, and do not generate additional spending or impact within the community after a period of time. This progression is termed leakage, and reduces the overall economic impact.

- Induced effects consist of the positive changes in employment, earnings, and tax collections generated by the direct and indirect expenditures.

Multiplier Effects

As noted above, the direct primary effect of facility operation on an area's economy is further increased though the re-spending of the initial funds. The total impact generated is estimated by applying what is termed a "multiplier" to the initial expenditure in order to account for the total economic impact of the re-spending activity. There are three primary multipliers used to estimate economic impact; the total output multiplier, the wages and salaries (earnings) multiplier and the employment multiplier. The application of these multipliers is simply a process of calculating the product of the direct spending and the multiplier.

The total output multiplier is used to estimate the aggregate total spending which takes place beginning with the direct spending and continuing through each successive round of spending. Similarly, the earnings and employment multipliers are used to measure the respective aggregate earnings and employment impacts of the direct spending.

The appropriate multipliers to be utilized are dependent upon certain regional characteristics and also the nature of the expenditure. An area that is capable of producing a wide range of goods and services within its borders will have high multipliers, reflecting the high probability of re-spending occurring within the region. If a high proportion of the expenditures must be imported from another geographical region, lower multipliers will result.

The multiplier estimates used in this analysis are based on data generated from two independent input/output multiplier systems as discussed later in this section.

Each of the measures of economic impact utilized in this analysis are further defined below:

- Total output represents the total of the direct and indirect spending effects of the project.

- Earnings represent the total dollar contributions to household earnings from each direct and indirect dollar of output delivered to the marketplace.

- Employment is expressed in terms of retained and/or newly created jobs. For purposes of this analysis, jobs are defined as one year of employment, or 2,080 annual hours of labor, and may be full- or part-time.

Based on the calculations of total output or total spending and the earnings estimates, the resulting effects in terms of **fiscal impacts** or tax collections are also estimated as part of this analysis. Tax revenues are based on existing tax rates, and changes to these rates will have an impact on the resulting tax collections. The sources of tax revenue which have been included within this report are as follows:

- State sales tax,
- State and city hotel/motel tax,
- State personal income tax,
- Corporate income tax, and
- Various other excise taxes.

4.2 Analysis of the Facility Construction Impacts

In evaluating the economic impact associated with the megaplex, convention center and stadium only developments, the first measure of economic change is generated through the construction of the facilities themselves. As a result of the construction of the referenced developments, additional collateral development may also be created. The impact of collateral development around the project site or as a result of the development of the megaplex, convention center or stadium has not been included within this analysis and would be considered incremental to economic impacts presented herein.

The impact of the construction phase is determined by the volume and nature of the construction expenditures. Based on cost estimates for referenced facility development options provided by Howard Needles Tammen & Bergendoff, and Sverdrup Corporation, the following assumptions have been made:

- Total project costs include construction costs, infrastructure costs and soft costs. Land costs have been excluded from the economic impact analysis.
- It is assumed that 80 percent of the project hard cost will take place within the local area for the Boston/Cambridge site, and 75 percent for the other sites.
- It is assumed that 85 percent of project hard costs will take place within the State of Massachusetts.

- The construction multipliers for the project are estimated as follows:

	Suffolk County Multipliers [1]	State Multipliers
Total output	1.9922	2.1753
Earnings	.5976	.6944
Employment	23.1	27.0

[1] The multipliers applicable to potential stadium only development sites in other Counties throughout the state are estimated at approximately 6 percent less than those estimated for Suffolk County. This reduction is primarily due to the comparatively larger industrial base located within the Suffolk County area.

A detailed summary of all project costs is presented in Volume II of this report.
The resulting construction period economic impact levels are a product of the multipliers and the level of direct spending. As previously noted, total output represents the total of direct and indirect impacts of the project. The total output, in turn, generates new earnings, additional manufacturing and other employment during the construction period. These impacts during the construction period are outlined in Exhibit 4.2-1.

As part of this analysis we have also calculated the estimates of the fiscal benefits associated with the project. These estimates are based on the direct spending and total output levels outlined above, applied to the appropriate sales and earnings tax rates. These tax sources represent the primary contributors of project related fiscal benefit. As no local sales or earnings taxes are currently levied, no local fiscal impacts have been estimated. As outlined in Exhibit 4.2-2, total construction period sales and earnings tax revenues associated with the megaplex project in 1998 dollars have been estimated to range from approximately $23.9 to $26.6 million depending on the site. Fiscal impacts for the stand alone convention center during the construction period range from $12.4 to $15.2 million depending on the site. The stadium only development fiscal impacts range from $7.4 million to $19.8 million depending on the specific site of the project and the development option, except for Foxboro, whose construction impacts are based upon a renovation as opposed to full construction of the project. Total fiscal impacts associated with such a renovation are estimated at approximately $3 million.

These estimates assume that no sales tax will be paid in conjunction with the direct construction expenditures. It should be noted that these estimates of construction economic and fiscal impacts may or may not be incremental, depending on the source of project funding. If these spending estimates represent dollars that would not otherwise be spent in the community, they can then be considered incremental impacts.

[illegible]

[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

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[illegible]

[illegible]

Exhibit 4.2–1
State of Massachusetts
Public Assembly Facility Development Analysis
Summary of Construction Period Economic Impacts – Local Area

Location	Total Direct Spending	Adjusted Direct Spending (2) (3)	Total Output	Earnings	Employment
Megaplex Facility					
Boston	$694,300,000	$519,840,000	$1,035,625,000	$310,656,000	12,000
Cambridge (1)	$728,300,000	$578,160,000	$1,151,810,000	$345,508,000	13,400
Stadium Only Facility–Domed					
Boston	$507,500,000	$370,400,000	$737,911,000	$221,351,000	8,600
Cambridge	$544,300,000	$430,960,000	$858,559,000	$257,542,000	10,000
Worcester	$543,600,000	$352,950,000	$660,958,000	$198,268,000	7,700
Lynn	$451,400,000	$296,550,000	$555,340,000	$166,585,000	6,400
Stadium Only Facility–Open Air					
Boston	$313,100,000	$214,880,000	$428,084,000	$128,412,000	5,000
Cambridge	$349,900,000	$275,440,000	$548,732,000	$164,603,000	6,400
Worcester	$349,200,000	$207,150,000	$387,923,000	$116,365,000	4,500
Lynn	$257,000,000	$150,750,000	$282,305,000	$84,683,000	3,300
Foxboro (4)	$83,100,000	$62,325,000	$116,714,000	$35,011,000	1,400
Stand Alone Convention Center					
Boston	$381,900,000	$269,920,000	$537,735,000	$161,304,000	6,200
Cambridge	$420,100,000	$331,600,000	$660,614,000	$198,164,000	7,700

Source: Sverdrup Corporation, HNTB and Coopers & Lybrand

(1) Three estimates were provided; the high end estimate was used in estimating construction period economic impact.

(2) Land acquisition costs have been excluded for the calculation of economic impact. Furthermore, it is assumed that 80% of the construction spending is incurred in Boston/Cambridge for facility development in these areas. Seventy-five percent of the construction spending is expected to take place in the local area for facility development on other sites throughout the State.

(3) It is assumed that 85% of the construction cost will be incurred in the State.

(4) Costs represent the capital requirements for the renovation of existing stadium, infrastructure improvements and soft cost. The costs do not include capital costs associated with land acquisition or purchase of the stadium.

Exhibit 4.2–1
State of Massachusetts
Public Assembly Facility Development Analysis
Summary of Construction Period Economic Impacts – Statewide (continued)

Location	Total Direct Spending	Adjusted Direct Spending (2) (3)	Total Output	Earnings	Employment
Megaplex Facility					
Boston	$694,300,000	$552,330,000	$1,201,483,000	$383,538,000	14,900
Cambridge (1)	$728,300,000	$614,295,000	$1,336,276,000	$426,566,000	16,600
Stadium Only Facility–Domed					
Boston	$507,500,000	$393,550,000	$856,089,000	$273,281,000	10,600
Cambridge	$544,300,000	$457,895,000	$996,059,000	$317,962,000	12,400
Worcester	$543,600,000	$400,010,000	$870,142,000	$277,767,000	10,800
Lynn	$451,400,000	$336,090,000	$731,097,000	$233,381,000	9,100
Stadium Only Facility–Open Air					
Boston	$313,100,000	$228,310,000	$496,643,000	$158,538,000	6,200
Cambridge	$349,900,000	$292,655,000	$636,612,000	$203,220,000	7,900
Worcester	$349,200,000	$234,770,000	$510,695,000	$163,024,000	6,300
Lynn	$257,000,000	$170,850,000	$371,650,000	$118,638,000	4,600
Foxboro (4)	$83,100,000	$70,635,000	$153,652,000	$49,049,000	1,900
Stand Alone Convention Center					
Boston	$381,900,000	$286,790,000	$623,854,000	$199,147,000	7,700
Cambridge	$420,100,000	$352,325,000	$766,413,000	$244,654,000	9,500

Source: Sverdrup Corporation, HNTB and Coopers & Lybrand

(1) Three estimates were provided; the high end estimate was used in estimating construction period economic impact.

(2) Land acquisition costs have been excluded for the calculation of economic impact. Furthermore, it is assumed that 80% of the construction spending is incurred in Boston/Cambridge for facility development in these areas. Seventy–five percent of the construction spending is expected to take place in the local area for facility development on other sites throughout the State.

(3) It is assumed that 85% of the construction cost will be incurred in the State.

(4) Costs represent the capital requirements for the renovation of existing stadium, infrastructure improvements and soft cost. The costs do not include capital costs associated with land acquisition or purchase of the stadium.

Exhibit 4.2–2
State Fiscal Benefit Calculations for Facility Development Options Construction Period Impacts

	Sales and Meals Tax Revenue	Personal Income Tax Revenue	Total Fiscal Benefit
Megaplex			
Boston	$8,861,000	$15,035,000	$23,896,000
Cambridge	$9,855,000	$16,721,000	$26,576,000
Stadium Only – Domed			
Boston	$6,314,000	$10,713,000	$17,027,000
Cambridge	$7,346,000	$12,464,000	$19,810,000
Worcester	$6,417,000	$10,888,000	$17,305,000
Lynn	$5,392,000	$9,149,000	$14,541,000
Stadium Only – Open Air			
Boston	$3,663,000	$6,215,000	$9,878,000
Cambridge	$4,695,000	$7,966,000	$12,661,000
Worcester	$3,766,000	$6,391,000	$10,157,000
Lynn	$2,741,000	$4,651,000	$7,392,000
Foxboro	$1,133,000	$1,923,000	$3,056,000
Stand Alone Convention Center			
Boston	$4,601,000	$7,807,000	$12,408,000
Cambridge	$5,652,000	$9,590,000	$15,242,000

Source: Coopers & Lybrand

4.3 Analysis of Megaplex and Stand Alone Convention Center Development

The economic and fiscal impacts generated during the operational phase of the project represent an annual contribution to an economy. In preparing this analysis we focus on two primary components; the *direct spending* associated with the project and the resulting *economic impacts*.

Direct Spending

The analysis related to the megaplex and the stand alone convention center has been prepared assuming a facility location within the Boston/Cambridge area. The first component of any economic impact analysis is to assess the level of direct spending taking place as a result of the project. The operations of the megaplex will generate direct spending from the following specific sources:

- Convention and trade show delegates.
- Stadium and NFL franchise related expenditures including fixed seating event attendee spending.

The operation of the stand alone convention center will generate direct spending only from convention and trade show related activity. Each of the direct spending categories is detailed below.

Convention and Trade Show Related Direct Impacts

In terms of convention and trade show related events, one of the primary sources of direct spending involves attracting event attendees from outside the local area to make purchases in hotels, restaurants, retail and other visitor industries. Events attracting their attendance largely from the Boston/Cambridge area represent a displacement of spending. In other words, these attendees would have likely made expenditures in the local area in some other manner had the event not taken place.

The calculation of direct spending for the exhibition facility component of the megaplex as well as a stand alone convention center is derived first by calculating the number of convention and trade show delegates expected to be attracted to the Boston/Cambridge area. We have based these estimates on the event, attendance and event day information presented in the market analysis (Section 2 of this report) for a mature year of facility operations stated in 1998 dollars. A summary of the calculation of out-of-

town delegate attendance and associated direct spending is presented in Exhibit 4.3-1. This calculation is based only on convention and trade show activity from national, regional and state events. No local consumer show or other event attendance has been included as the large majority of these event attendees come from the local area and represent a displacement of existing spending rather than new spending to the community. As noted in Exhibit 4.3-1, 60 percent of the attendance at the state events has been included in calculating economic impacts in order to reflect the large percentage of attendees that may be coming to the event from the local area.

Within Exhibit 4.3-1, estimated delegate attendance is applied to estimates of average delegate spending. Spending estimates are based on the results of the International Association of Conventions and Visitors Bureaus (IACVB) Convention and Trade Show Expenditures Survey, adjusted for specific price levels in the Boston/Cambridge area. The results of the survey included data concerning event-related expenditures by delegates, exhibitors, associations, and exposition service contractors. A breakdown of the resulting delegate spending levels are presented in the following chart.

	Average Spending Per Delegate Per Day	
	IACVB Estimate (1988 Dollars)	Adjusted for Boston (1992 Dollars)
Delegate expenditures	$126.50	$ 134.00
Association expenditures	13.30	16.50
Exhibitor expenditures (1)	66.90	83.00
Exposition service contractor expenditures (1)	4.70	5.80
Total	$211.40	$239.30

(1) These expenditures take place only for exhibition space events.

An analysis similar to that presented in Exhibit 4.3-1 has been performed for a stand alone convention center. As the stand alone convention center would not have the stadium floor as additional exhibit space, the delegate direct spending estimates associated with the convention center could be approximately 10 percent less than that associated with the megaplex. This additional exhibition space, while not critical to the success of the exhibition component of the megaplex, will likely allow the megaplex to attract a slightly higher level of events as compared to the stand alone convention center. As a result, the direct spending, in 1998 dollars, for a stand alone convention center is estimated at approximately $333.0 million as compared to the megaplex direct spending of $369.0 million presented in Exhibit 4.3-1.

Exhibit 4.3–1
Massachusetts Stadium/Exhibition Facilities Analysis
Megaplex Economic Impact Calculations
Direct Expenditures

	State		National/Regional				Total
	10,001– 50,000 nsf	100,000+ nsf	Less than 10,000 nsf	10,001– 50,000 nsf	50,001– 100,000 nsf	100,000+ nsf	
Events	1	1	7	33	14	8	64
Average Event Days	3.0	3.0	4.2	3.6	4.2	3.4	
Average Delegate Attendance	2,760	4,969	2,229	3,838	6,226	12,606	
Total Delegate Days	8,280	14,907	65,533	455,954	366,089	342,883	1,253,646
Expenditures per Delegate Day (1)	$239	$239	$151	$239	$239	$239	
Total Expenditures (1992)	**$1,978,920**	**$3,562,773**	**$9,895,483**	**$108,973,006**	**$87,495,271**	**$81,949,037**	**$293,854,490**
State Event Adjustment Factor*	60.00%	60.00%	100.00%	100.00%	100.00%	100.00%	
Total Direct Expenditures (1992)	**$1,187,352**	**$2,137,664**	**$9,895,483**	**$108,973,006**	**$87,495,271**	**$81,949,037**	**$291,637,813**
Total Direct Expenditures (1998)	**$1,502,400**	**$2,704,800**	**$12,520,900**	**$137,885,600**	**$110,709,400**	**$103,691,700**	**$369,014,800**

Source: Coopers & Lybrand

* State events have been adjusted for higher percentage of local area attendees.

It should be noted that evaluation of the economic impact generated by each of the development options (megaplex, stand alone convention center and stadium only development) focuses on **total** economic impact. In preparing the fiscal or tax benefit analysis presented later in this section, we also focus on **incremental** benefits, or those benefits which are new to the area as a direct result of the project. For example, some level of fiscal impact is currently being generated by the existing Hynes Convention Center. The calculation of incremental benefits associated with new facility development would, therefore, exclude these existing benefits. This concept is discussed further in the summary of project fiscal impacts.

As outlined in the market analysis, the ability of any convention facility to fully attract and accommodate its potential event market depends on a number of factors including hotel availability, tourism/visitor infrastructure and other such characteristics. The lack of any of these characteristics could impact the resulting event capture levels and associated economic impacts. As no final site or site improvements have been identified at this time, the economic and fiscal impacts associated with convention and trade show events are presented based on a capture of the full market potential as outlined in the market analysis.

Exhibit 4.3-2 presents a breakdown of the total 1998 convention and trade show related direct spending by industry category for both the megaplex and convention center. As outlined in the Exhibit, the hotel industry accounts for over 30 percent of the convention and trade show related direct spending. Restaurants account for 24 percent, with various other visitor/event production related industries accounting for the remaining 46 percent.

Event Attendee and NFL Franchise Related Direct Impacts

As the potential primary tenant of the megaplex, the direct spending and associated impacts of an NFL franchise are integrally linked to the overall impacts generated by the complex. For purposes of this calculation of direct spending, both stadium operating revenue as well as NFL franchise revenues have therefore been included.

The revenues attributable to event attendee spending activity and franchise operations can be broken down into the following specific categories:

- **In-stadium attendee and franchise related revenues** - In-stadium revenue includes such items as ticket, concession and novelty sales generated by attendees at fixed seating events including NFL games, concerts and other such events. The calculations of in-stadium direct spending are based on the event and attendance data presented in the market analysis section of this report, and per-capita spending data based on industry averages adjusted for conditions within the Boston/ Cambridge area.

Exhibit 4.3 – 2
Summary of Megaplex & Stand Alone Convention Center Direct Spending
Direct Spending Allocation
Exhibition Event Spending – 1998 Dollars

Event Spending	Allocation Percentage	Megaplex Direct Spending	Stand Alone Convention Center Direct Spending
Hotel	32.72%	$120,742,000	$108,926,000
Restaurant	24.36%	89,892,000	81,095,000
Retail	5.47%	20,185,000	18,210,000
Entertainment	3.47%	12,805,000	11,552,000
Local Transit	2.89%	10,665,000	9,621,000
Other (1)	31.09%	114,727,000	103,499,000
Total	100.0%	$369,016,000	$332,903,000

Note: Reflects a stabilized year of facility operations in 1998 dollars.

(1) Includes exhibitor related expenditures.

Source: Coopers & Lybrand

In addition, various franchise revenues from NFL sharing/television, preferential amenities, advertising and other such sources contribute to direct impacts. Estimates of franchise revenues are based on information provided by the Patriots NFL Franchise, as well as extensive data on comparable NFL markets throughout the country.

- **Out-of-stadium impacts** - It is expected that a portion of the total fixed seating event attendees will make purchases outside the stadium in such areas as restaurants, entertainment venues, retail and other such industries. In addition, a small percentage of event attendees are assumed to utilize area hotels. As with the stadium related expenditures, estimates of out-of-stadium spending are based on data developed within the market analysis, as well as industry average per-capita spending information.

Exhibit 4.3-3 presents a summary of the estimated revenues generated in each of these categories, assuming 1998 event and revenue levels. As outlined in Exhibit 4.3-3, it is estimated that approximately $90 million in direct stadium and franchise related revenue, and over $5.7 million in out-of-stadium revenue could be generated in 1998. As previously discussed, after the initial spending round, the revenues generated through the direct spending are passed through the economy as the re-spending of the direct expenditures takes place. However, there are specific team related items which do not pass through the economy in the traditional manner, therefore requiring adjustment to direct impact totals before the resulting economic impacts can be estimated. For example, a large percentage of player costs are expected to leave the economy immediately as many NFL players reside in other parts of the country during the off season. In addition, some of the direct impacts are lost due to potential deferments and investments of a portion of player costs. Similarly, the team costs related to NFL assessments are assumed to leave the economy immediately.

As a result, Exhibit 4.3-3 reflects approximately $24.5 million in downward adjustments to total direct spending. The resulting revenue which impacts the area economy is measured at approximately $71.2 million in 1998. A summary of the direct totals from all convention, stadium and franchise direct spending categories is presented as Exhibit 4.3-4.

Economic Impacts

Based on the calculations of total direct impact generated from the megaplex project and a stand alone convention center, we are able to utilize specific industry multipliers to estimate the resulting economic impacts. These include total output or spending, earnings and employment.

Exhibit 4.3–3
Massachusetts Stadium/Exhibition Facilities Analysis
Event Attendee & NFL Franchise Related Revenue
1998 Dollars

In–stadium/franchise related revenue (1):	$90,043,000
Out–of–stadium event revenue (2):	5,660,000
	$95,703,000
Adjustments: (3)	(24,464,000)
Estimated Total Direct Revenue	$71,239,000

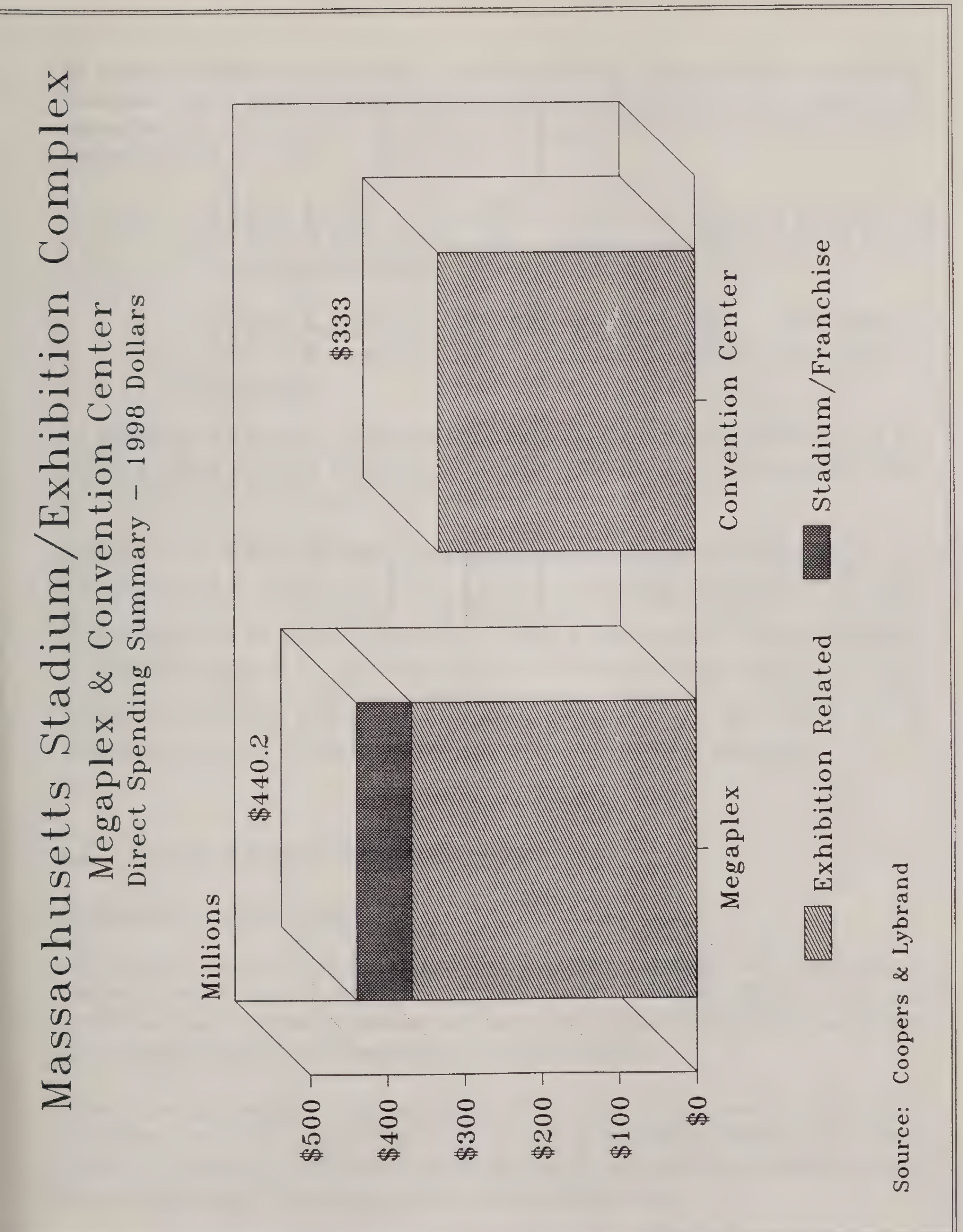
Source: Coopers & Lybrand

(1) Stadium revenue includes such items as ticket purchases, concession and novelty spending made by attendees. Franchise revenues include league sharing/television, advertising, and other related revenues.

(2) Out–of–stadium revenue includes all primary purchases outside the stadium in such areas as restaurants, entertainment venues, retail, and other such industries.

(3) Due to the unique nature of specific franchise operations, some adjustments to direct impacts are necessary. A large percentage of player costs are expected to leave the economy as some players relocate to other regions in the offseason. In addition, some of the direct spending is lost due to potential deferments and investments of a portion of player costs. The team costs related to league assessments are assumed to leave the economy immediately.

Exhibit 4.3-4



Massachusetts Stadium/Exhibition Complex

Megaplex & Convention Center

Direct Spending Summary – 1998 Dollars

Source: Coopers & Lybrand

[illegible]

[illegible]

In order to estimate the economic impact by industry, it is necessary to utilize an economic impact model or models to measure the effects of the direct expenditures throughout the economy. For purposes of this report, we have used the following two specific sources.

- **IMPLAN System** - The IMPLAN System was originally developed by the Federal Government and is currently maintained primarily by the University of Minnesota.

- **Regional Input/Output Multiplier System (RIMS)** - The RIMS II system was developed and is maintained by the U.S. Department of Commerce.

In preparing the analysis, direct spending data was run through IMPLAN and the resulting output data was compared to the RIMS multipliers. In all cases, the RIMS and the IMPLAN data were generally comparable.

Exhibit 4.3-5 presents a summary of the total output, earnings and employment for both the megaplex and convention center. The the total output generated by the direct spending related to the megaplex is estimated at over $1 billion annually. In addition, total earnings are estimated at approximately $360 million annually, with approximately 13,300 jobs retained or created within the Commonwealth of Massachusetts. The total output generated by a stand alone convention center is estimated at approximately $751 million annually. The total earnings generated is approximately $271 million and the employment retained or created is estimated to be approximately 9,400 jobs.

4.4 Analysis of Stadium Only Development

Stadium Only - Direct Impacts

The primary sources of direct impacts for the various stadium only developments consist of event attendee purchases and NFL franchise revenue. With no dedicated exhibition space component included as part of this development, little or no impacts from convention and trade show delegates will be generated.

As with the calculation of megaplex related direct impact totals, event and attendance data from the market analysis has been utilized in calculating stadium only related impacts. In addition, information from the Patriots NFL franchise and industry average data has been used to approximate franchise related spending.

Exhibit 4.3–5
Massachusetts Stadium/Exhibition Complex Analysis
Summary of Megaplex and Stand Alone Convention Center Economic Impacts
Operations

	Total Output	Earnings	Employment (1)
Megaplex (2):			
Exhibition Related Impacts	$832,554,000	$300,944,000	10,400
Fixed Seating Related Impacts	$174,493,000	$58,399,000	2,900
Boston/Cambridge Megaplex	$1,007,047,000	$359,343,000	13,300
Convention Center (3):			
Boston/Cambridge	$751,047,000	$271,482,000	9,380

Source: Coopers & Lybrand

(1) Employment impacts are measured in terms of units of employment contributed to the economy. Some part of these impacts will likely take the form of retained employment or the increased security of existing jobs.

(2) Approximately 65 percent of exhibition related economic impact or $541 million in total output, $196 million in earnings and 6,760 in employment is incremental to the Commonwealth, assuming that the Hynes does not attract any additional new activity to the existing facility upon completion of the megaplex. If the Hynes is able to refocus its marketing to attract new market segments and event activity which is not currently being attracted to the Commonwealth or Boston area, total economic impact would increase, creating additional incremental impact to the Commonwealth and Boston economies.

The majority of the stadium/franchise portion, approximately 90 percent, of the economic impact currently exists within the Commonwealth as the Patriots currently make Massachusetts their home. Therefore, as long as the Patriots remain in Massachusetts these benefits will continue to accrue to the Commonwealth economy.

(3) The incremental economic impact related to the stand alone convention center is approximately 61 percent of the economic impact or $458 million in total output, $166 million in earnings and 5,720 in employment.

As part of the analysis of stadium only direct impacts, we have also focused on the effects of the specific locations for the facility. Within each market, we have made adjustments to the level of event attendee purchases and NFL franchise revenue in order to reflect the unique market and economic conditions of each area. For example, adjustments have been made to the quantity and price structure of luxury seating as appropriate within each market area.

The resulting stadium, both domed and open air, and franchise related direct impacts estimated for each potential development site are presented in Exhibit 4.4-1. As outlined in the Exhibit, an open air facility generates slightly less in terms of direct spending as compared to a domed facility. This is primarily due to the additional events that a domed stadium could likely attract. The strength of the market potential for stadium only development on the various sites is fairly consistent, with slight reductions in direct spending for sites outside of Boston/Cambridge.

Stadium Only - Economic Impacts

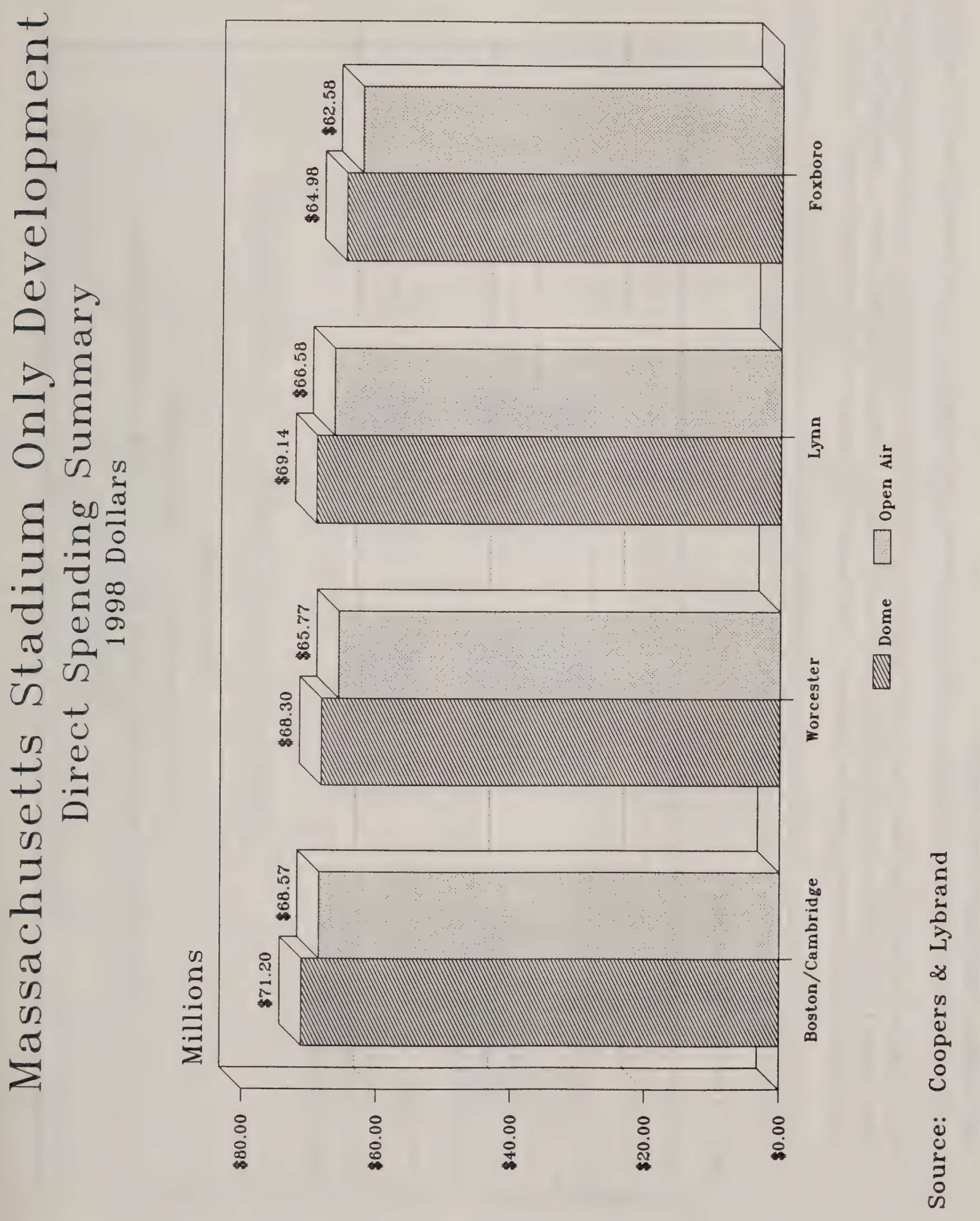
The methodology used to estimate the economic impacts generated from the stadium only direct spending is consistent with the methodology outlined as part of the megaplex and convention center analysis. Both RIMS II and IMPLAN input/output models have been utilized in order to measure the multiplier effect of the direct impacts as they pass through the state and local economies.

Within this stadium only analysis, we have incorporated adjustments to the specific industry multipliers for each of the various stadium markets. Applying the direct impact totals outlined above, we have estimated the resulting output, earnings and employment effects generated by the stadium only development (domed and open air) on each of the potential facility sites, as presented in Exhibit 4.4-2.

Total output related to the stadium only project is estimated to range from approximately $147 to $174.5 million annually, with approximately $49 to $58 million in earnings and approximately from 2,500 to 2,900 new or retained jobs, depending on the various location and roof structure development option.

As outlined in the Exhibit, the impacts are slightly less for the potential sites outside Boston. This is primarily due to slightly lower direct spending, and the lower industry multipliers associated with each community. As the Boston area generally maintains a comparatively high level of industry, its multiplier is slightly higher than that found in other state-wide communities.

Exhibit 4.4-1



Massachusetts Stadium Only Development

Direct Spending Summary

1998 Dollars

Source: Coopers & Lybrand

Exhibit 4.4–2
Summary of Domed and Open Air Stadium Economic Impacts
Economic Impacts – 1998 Dollars
Operations

	Total Output	Earnings	Employment (1)
Domed Stadium (2)			
Boston/Cambridge	$174,493,000	$58,399,000	2,900
Worcester	$155,730,000	$52,119,000	2,590
Lynn	$157,713,000	$52,783,000	2,620
Open Air Stadium (2)			
Boston/Cambridge	$168,037,000	$56,238,000	2,790
Worcester	$149,968,000	$50,191,000	2,490
Lynn	$151,878,000	$50,830,000	2,520
Foxboro (3)	$147,307,000	$49,300,000	2,450

Source: Coopers & Lybrand

(1) Employment impacts are measured in terms of units of employment contributed to the economy. Some part of these impacts will likely take the form of retained employment or the increased security of existing jobs.

(2) The majority of the stadium/franchise portion, approximately 90 percent, of the economic impact currently exists within the Commonwealth as the Patriots currently make Massachusetts their home. Therefore, as long as the Patriots remain in Massachusetts these benefits will continue to accrue to the Commonwealth economy.

(3) This analysis assumes that the proposed renovations planned for the stadium in Foxboro will provide for facility amenities comparable to new facility construction.

4.5 Summary of Project Fiscal or Tax Impacts

At this point in the analysis, we have focused on quantifying the direct spending generated by the various facility development options and tracking the resulting economic impacts throughout the economy. The purpose of the remainder of this section is to develop estimates of the fiscal benefits generated on both a local and state-wide basis. Throughout this analysis, the following tax sources have been focused on:

- State sales tax,
- State and city hotel/motel tax,
- State personal income tax,
- Corporate income tax, and
- Various other excise taxes.

The analysis of fiscal impacts involves applying the total output or spending taking place within specific industries, to the applicable tax rates or structures. Any changes to these tax rates will impact the resulting fiscal impact estimates.

In presenting the fiscal impacts, the following specific development scenarios have been considered:

- Megaplex development within the Boston/Cambridge area:
  - Impacts on the Boston Metropolitan area;
  - Impacts on the State;
- Stand alone convention center within the Boston/Cambridge area:
  - Impacts on the Boston Metropolitan area;
  - Impacts on the State;
- Stadium only development in various communities:
  - Local area impacts; and
  - Impacts on the State.

In preparing estimates of fiscal benefit, we first focus on the total tax revenue attributable to the project, based on the total direct spending and economic impacts outlined earlier in this section. In addition, we have estimated the portion of the total fiscal benefits which can be characterized as incremental impacts. Incremental impacts refer to the benefits to the community or state which are not currently being generated by existing public assembly facilities. For example, the Hynes Convention Center in Boston currently caters to the convention and trade show market. As a result, some

portion of the total economic and fiscal benefits attributable to the megaplex and stand alone convention center are currently being generated in the Boston metropolitan area.

In preparing this report, it has been assumed that the convention and trade show activity that currently takes place at the Hynes Convention Center will be accommodated at a megaplex or convention center development once facility operation commences. However, the transfer of event activity from the Hynes to either of these facilities will provide new opportunity for the existing Hynes as event days are opened to potentially attract other events to the facility which are not in direct competition with the primary market for new exhibition space facilities. This refocus for the Hynes to attract other market segments would serve to increase total economic benefits to the local area and the Commonwealth. The ability of the Hynes to attract other event markets has not been included within the scope of this study. However, if the development of the megaplex or convention center is pursued further, additional study should be considered with regard to the operating and marketing issues surrounding the two facilities. This analysis should focus on the market potential for the repositioning of the Hynes, the potential for joint marketing and the operational relationships of the facilities.

In evaluating the economic and fiscal impacts of the megaplex, convention center and stadium only development options, the impact of ancillary development around the project site or as a result of the development of the megaplex or stadium has not been included with in this analysis and would be considered incremental to economic impacts presented herein.

The fiscal data presented in Exhibit 4.5-1 reflects the total fiscal benefits generated for the both Commonwealth and the Boston metropolitan area in 1998 dollars as a result of the exhibition and stadium/franchise related economic impact. As outlined in Exhibit 4.5-1, total fiscal impacts are estimated to reach over $63 million annually to the Commonwealth and over $8.5 million in the Boston metropolitan area, for a combined total fiscal benefit of approximately $71.5 million in 1998 dollars. Fiscal impacts associated with stadium facility development range from $10.4 million to $12.6 million depending on the location of and roof structure of the facility.

Exhibit 4.5-1 also presents a summary of the total fiscal benefits generated by the convention center project for the state and local area economies. The Commonwealth and local economies receive approximately $45.5 and $7.6 million respectively or approximately $53.1 million on a combined basis, in total fiscal benefit in 1998 dollars. As previously noted, the tax structures within the local communities do not incorporate a sales tax. Therefore, minimal hotel occupancy tax revenue attributable to the stadium only project may be generated, as outlined in the Exhibit.

Exhibit 4.5 – 1

State of Massachusetts

Public Assembly Facility Development Analysis

Fiscal Impacts – 1998 Dollars

	State	**Local**	**Total**
Megaplex (1)			
■ Boston/Cambridge	$63,016,000	$8,511,000	$71,527,000
Domed Stadium (2)			
■ Boston/Cambridge	$12,529,000	$65,000	$12,594,000
■ Worcester	$11,182,000	$58,000	$11,240,000
■ Lynn	$11,324,000	$59,000	$11,383,000
Open Air Stadium (2)			
■ Boston/Cambridge	$12,065,000	$63,000	$12,128,000
■ Worcester	$10,768,000	$56,000	$10,824,000
■ Lynn	$10,905,000	$57,000	$10,962,000
■ Foxboro	$10,367,000	$54,000	$10,421,000
Convention Center (3)			
■ Boston/Cambridge	$45,544,000	$7,619,000	$53,163,000

Source: Coopers & Lybrand

(1) Approximately 65 percent or $32.8 million of the exhibition space related fiscal impact is incremental to the Commonwealth. Approximately $5.5 million is incremental to the local area for a combined incremental impact of $38.3 million. The majority of the stadium/franchise portion of the fiscal impact currently exist within the Commonwealth as the Patriots currently make Massachusetts their home. Therefore, as long as the Patriots remain in Massachusetts these benefits will continue to accrue to the Commonwealth economy.

(2) As noted in footnote (1), the majority of the stadium/franchise fiscal impact currently exists within Commonwealth.

(3) The incremental fiscal impact related to the stand alone convention center is approximately 61 percent or $27.8 million to the Commonwealth and $4.6 million to the local area for a total of $32.4 million.

5. Financing Analysis

This section provides an analysis of various financing options for a megaplex facility, a stadium only project and a stand alone convention center project. It includes an overview of financing goals, bonding scenarios for each project, a summary of potential financing structures, a discussion of certain public and private revenue streams that might be dedicated to pay for the project debt service and/or operating costs, and a number of case studies for facilities in other states.

While specific financing recommendations for the project must await final decisions on its location, project design, cost and detailed estimates of certain revenue streams that could contribute to debt service and operating expenses, our financial and legal analysis has quantified the annual requirements for each project option and identified potential funding sources. In conducting the analysis, similar recent projects which have been financed in other states were evaluated and compared with respect to the feasibility of such models in light of current Massachusetts economic, fiscal, political and legal constraints.

5.1 Overview of Financing Goals

Our assumed goals for the plan are:

(i) To ensure sufficient funding for the various development options construction costs including land acquisition, infrastructure improvements and parking structures;

(ii) To minimize the amount of tax revenues required to support the financing while maximizing private sector and user-related revenue sources;

(iii) To employ a sound and proven credit structure to reduce interest costs;

(iv) To use tax exempt bonding structures for required debt financing as much as possible while minimizing higher-cost taxable bonding;

(v) To avoid financing structures requiring major legislative changes or the creation of large new administrative or funding entities, and

(vi) To compare the incremental economic benefits of the facility with the financing costs supported by public funds.

5.2 Analysis of Megaplex, Stadium Only and Convention Center Bonding Scenarios

The following analysis sets forth preliminary financing cost estimates for the proposed megaplex, stadium only and convention center projects. In developing our analysis we have used the following key assumptions:

(i) The megaplex would be financed with tax-exempt debt for 97 percent of the construction cost and taxable debt will be used for the balance;

(ii) The stadium only facility would be financed completely by taxable bonds and the convention center would be financed entirely with tax-exempt debt;

(iii) Principal amortization on all bonds would begin the year after the scheduled completion dates;

(iv) The bonds issued for the facilities would have a thirty-year final maturity date;

(v) The credit ratings for the bonds are at the A level;

(vi) Total costs of issuance relating to the financing are 1 percent of the bonds issued;

(vii) The construction period for the megaplex is three years, and the construction periods for the stadium and convention center are two years;

(viii) Interest would be capitalized through the construction period for each project;

(ix) There is no debt service reserve fund requirement;

(x) The bonds would be structured to provide level debt service payments;

(xi) Fixed interest rates as of December 16, 1992 are used in structuring the bond issue; and

(xii) For each of the contemplated sites, we have used the construction cost estimates provided by Sverdrup Corporation and HNTB.

This analysis assumes that the entire project is financed publicly with fixed rate debt. In practice, it is likely that a portion of the financing would come from private equity funding (the sale of development rights, contributions from facility vendors or tenants, premium seating payments, etc.) as discussed in Section 5.4 - Analysis of Potential Revenue Sources. Furthermore, Foxboro Stadium Associates have indicated that the renovation of the existing

stadium in Foxboro could be financed privately. The viability of such private sector financing has not been tested as a part of this analysis. Equity funding would provide for a corresponding reduction in the annual debt service requirements. Similarly, funding for certain project elements from other private, public or quasi-public entities could reduce the estimated debt service expenses. In addition, the use of other bonding structures such as variable rate debt might permit lower financing costs.

Exhibits 5.2-1 through 5.2-3 summarize the estimated funding requirements for the respective projects. The size of the bond issue is based on the funds necessary to build the project and pay interest costs during the construction period. In calculating the amount of the bond issue, it is assumed that the funds held in the construction fund and capitalized interest reserve will earn interest, therefore, the total funds available for the project include the bond amount plus interest earnings.

Exhibit 5.2-1 (1)
Megaplex Facility
Estimated Project and Financing Cost

	Tax-Exempt	Taxable	Total
Par Amount of Bonds	$825,608,000	$28,022,000	$853,630,000
Maximum Annual Debt Service	$63,136,000	$2,708,000	$65,844,000
Construction Fund	$676,655,000	$20,927,000	$697,582,000
Earnings in Construction Fund	29,796,000	922,000	30,718,000
Total Available for Construction	$706,451,000	$21,849,000	$728,300,000
Capitalized Interest Fund	$140,697,000	$6,815,000	$147,512,000
Earnings in Capitalized Interest Fund	7,478,000	362,000	7,840,000
Total Available for Capitalized Interest	$148,175,000	$7,177,000	$155,352,000
Estimated Costs of Issuance	$8,256,000	$280,000	$8,536,000

(1) Represents the high end cost associated with development on the Cambridge site versus development on the Boston - South Bay site. Construction fund and interest/issuance costs for a megaplex development on the Boston - South Bay site are estimated at approximately $665 million and $149 million respectively. Annual debt service associated with the Boston - South Bay site is estimated at approximately $63 million.

It should be noted that the megaplex costs for the South Bay site include the construction of a 3,000 car parking structure and a 5,000 car surface parking area with total costs of approximately $60 million or approximately $6.9 million annually. Parking development at the Cambridge site includes a 5,000 car parking structure and surface parking of 3,000, with total costs of approximately $84 million or $9.7 million annually. It has been assumed that development costs related to the parking at the megaplex would be included in the project's bond issue. However, it is possible that the

parking component of the project could be funded by other entities as the parking would likely be used for downtown commuters and other non-event related patrons. This is particularly relevant to the South Bay site due to the site's accessibility to downtown and airport destinations. If the parking costs were excluded from the project financing, the maximum annual debt service associated with the megaplex at either site would be approximately $56 million.

Exhibit 5.2-2
Open Air Stadium Only Facility
Estimated Project and Financing Cost

Project Site:	Boston/ Cambridge (1)(2)	Worcester (3)	Lynn	Foxboro (4)
Par Amount of Bonds	$411,436,000	$411,013,000	$302,493,000	$97,809,000
Maximum Annual Debt Service	$39,354,000	$39,276,000	$28,906,000	$9,346,000
Construction Fund	$340,106,000	$339,426,000	$249,807,000	80,774,000
Earnings in Construction Fund	9,794,000	9,774,000	7,193,000	2,326,000
Total Available for Construction	$349,900,000	$349,200,000	$257,000,000	$83,100,000
Capitalized Interest Fund	$67,612,000	$67,477,000	$49,661,000	$16,057,000
Earnings in Capitalized Interest Fund	2,554,000	2,544,000	1,876,000	607,000
Total Available for Capitalized Interest	$70,166,000	$70,021,000	$51,537,000	$16,664,000
Estimated Costs of Issuance	$4,118,000	$4,110,000	$3,025,000	$978,000

(1) Represents the high end costs associated with development on the Cambridge site versus development on the Boston - South Bay site. Project cost estimates for stadium development on the Boston - South Bay site are approximately 10 percent lower than the Cambridge project costs.

(2) Includes $84 million for structural and surface parking associated with the Cambridge site. Parking cost on the Boston - South Bay site have been estimated at $60 million.

(3) Includes $74 million for structural and surface parking.

(4) The financing costs associated with Foxboro assume the renovation of the existing facility. It should be noted that the costs presented for the other stadium sites include land acquisition and new construction. Therefore, it has been assumed that the land and stadium would be owned by the issuing authority. In the case of Foxboro, the financing is related to the renovation only. Purchase of the existing facility by the public sector would likely be necessary in order to initiate publicly funded improvements. The costs of acquiring the property should be fully analyzed in determining the total costs of the Foxboro option.

Representatives of the existing stadium in Foxboro, Foxboro Stadium Associates (a private sector entity), have indicated that the renovations proposed (approximately $50 million) would be financed privately with the estimated infrastructure cost being financed publicly. The ability of the private sector to fund the renovations is directly dependent upon securing a new or extended lease with the Patriots by satisfying the revenue and facility requirements of the Patriots and the NFL, as well as providing sufficient return on the private sector renovation investment. Representatives of the New England Patriots have stated that they do not believe private financing is feasible or practical because of the need of the franchise to have lease arrangements and facilities which allow them to be competitive in the NFL. The extent to which the

aforementioned requirements can be met, or an acceptable lease negotiated, has not been analyzed as part of this study.

The additional annual debt service cost to construct a domed stadium for the Boston/ Cambridge, Worcester and Lynn sites is approximately $22 million and would require an additional $230 million in bond issuance.

Exhibit 5.2-3
Convention Center Facility
Estimated Project and Financing Cost

	Boston/Cambridge Site [1]
Par Amount of Bonds	$466,561,000
Maximum Annual Debt Service	$35,119,000
Construction Fund	$408,341,000
Earnings in Construction Fund	11,759,000
Total Available for Construction	$420,100,000
Capitalized Interest Fund	$53,554,000
Earnings in Capitalized Interest Fund	2,023,000
Total Available for Capitalized Interest	$55,577,000
Estimated Costs of Issuance	$4,666,000

(1) Represents the high end cost associated with development on the Cambridge site versus development on the Boston-South Bay site. Construction fund and interest/issuance costs for a stand alone convention center at the Boston - South Bay site are estimated at approximately $371 million and $53 million respectively. Annual debt service is estimated at approximately $32 million for the convention center development on the Boston - South Bay site.

As with the megaplex, the convention center only development includes approximately $60 to $84 million related to the construction of parking, depending on the development site. If this can be funded outside of the project, the maximum debt service with the stand alone convention center would be reduced to approximately $25.5 million per annum.

As previously noted and illustrated on the charts above, the two major cost components of the bond issue are the construction and capitalized interest funds. A description of the methodology used in sizing each of these funds is briefly described below.

> **Construction Funds** - Bond proceeds are placed in the construction fund to provide the monies to build a facility. As stated earlier, we have assumed a three-year construction period for the megaplex project and a two-year

construction period for the stadium only and convention center facilities. For purposes of this analysis, we have also assumed the monies in the construction fund are withdrawn in equal monthly installments. In addition, to minimize the amount of the bond proceeds required for construction, the interest earnings generated in the fund are also used to pay project costs. An earnings rate of 3 percent was assumed.

Capitalized Interest Fund - Capitalized interest uses bond proceeds to provide investors with interest payments during the construction period when project-related revenues and/or state monies would not be available to make debt service payments. As with the construction fund, we have included interest earnings at a 3 percent interest rate to pay for the capitalized interest requirements. *It may be possible to avoid the need for capitalized interest under certain credit structures whereby monies pledged to bondholders are not dependent on project-related revenues. Eliminating the capitalized interest requirement can reduce the projected annual debt service costs by up to approximately $11 million on the megaplex, $7 million on the open air stadium, $10 million on the domed stadium, and $4 million on the convention center, and lower the required bond sizes to approximately $705 million, $356 million, $547 million and $412 million for the respective projects.*

Annual Project Cost

Exhibits 5.2-4 through 5.2-6 summarize the annual project costs of the various development projects by combining the annual operating results with the maximum annual debt service payments. It should be noted that the annual project costs are subject to achieving the market potential identified in Section 2, the lease agreement negotiated between the stadium owner/operator and the team, and final construction costs and financing terms.

5.3 Potential Financing Structures

Project Financing

Project financing usually combines a private or public equity contribution and debt that is supported by the revenues produced by the use of the facility itself. The economics of convention centers do not lend themselves to project financings because of the operating losses they incur. The structure may be applicable to some elements of a stand-alone football stadium or specific portions of a megaplex. A parking garage may be one example of a self-supporting portion of either type of project, depending on what revenues from operations can be negotiated with facility tenants.

Exhibit 5.2–4

Massachusetts Stadium/Exhibition Facilities Analysis

Public Assembly Facility Development Analysis

Project Financing Summary – SCENARIO 1

	Facility Operating Shortfall / Surplus	Project Debt Service	Annual Debt and Operating Costs	
Megaplex				
■ Boston/Cambridge	($8,766,000)	($65,844,000)	($74,610,000)	(1)
Domed Stadium				
■ Boston/Cambridge	($3,323,000)	($61,354,000)	($64,677,000)	(1)
■ Worcester	($3,323,000)	($61,276,000)	($64,599,000)	
■ Lynn	($3,323,000)	($50,906,000)	($54,229,000)	
Open Air Stadium				
■ Boston/Cambridge	($1,211,000)	($39,354,000)	($40,565,000)	(1)
■ Worcester	($1,211,000)	($39,276,000)	($40,487,000)	
■ Lynn	($1,211,000)	($28,906,000)	($30,117,000)	
■ Foxboro	($1,211,000)	($9,346,000)	($10,557,000)	(2)
Convention Center				
■ Boston/Cambridge	($8,388,000)	($35,119,000)	($43,507,000)	(1)

Source: Coopers & Lybrand, Bear Stearns

(1) By excluding the parking costs and the associated event related revenues, the annual debt and operating costs would be reduced to $63,641,000, $54,324,000, $30,366,000 and $33,288,000 for the megaplex, domed stadium, open air stadium and convention center projects respectively.

(2) Includes project costs associated with the renovation of Foxboro only and does not include costs associated with land acquisition and the purchase of the existing stadium.

Exhibit 5.2–5

Massachusetts Stadium/Exhibition Facilities Analysis

Public Assembly Facility Development Analysis

Project Financing Summary – SCENARIO 2

	Facility Operating Shortfall / Surplus	Project Debt Service	Annual Debt and Operating Costs	
Megaplex				
■ Boston/Cambridge	($3,865,000)	($65,844,000)	($69,709,000)	(1)
Domed Stadium				
■ Boston/Cambridge	$1,453,000	($61,354,000)	($59,901,000)	(1)
■ Worcester	$512,000	($61,276,000)	($60,764,000)	
■ Lynn	$757,000	($50,906,000)	($50,149,000)	
Open Air Stadium				
■ Boston/Cambridge	$3,508,000	($39,354,000)	($35,846,000)	(1)
■ Worcester	$2,573,000	($39,276,000)	($36,703,000)	
■ Lynn	$2,818,000	($28,906,000)	($26,088,000)	
■ Foxboro	$1,995,000	($9,346,000)	($7,351,000)	(2)
Convention Center				
■ Boston/Cambridge	($8,388,000)	($35,119,000)	($43,507,000)	(1)

Source: Coopers & Lybrand, Bear Stearns

(1) By excluding the parking costs and the associated event related revenues, the annual debt and operating costs would be reduced to $58,569,000, $49,377,000, $25,476,000 and $33,288,000 for the megaplex, domed stadium, open air stadium and convention center projects respectively.

(2) Includes project costs associated with the renovation of Foxboro only and does not include costs associated with land acquisition and the purchase of the existing stadium.

Exhibit 5.2–6
Massachusetts Stadium/Exhibition Facilities Analysis
Public Assembly Facility Development Analysis
Project Financing Summary – SCENARIO 3

	Facility Operating Shortfall / Surplus	Project Debt Service	Annual Debt and Operating Costs
Megaplex			
■ Boston/Cambridge	$2,538,000	($65,844,000)	($63,306,000) (1)
Domed Stadium			
■ Boston/Cambridge	$7,731,000	($61,354,000)	($53,623,000) (1)
■ Worcester	$5,849,000	($61,276,000)	($55,427,000)
■ Lynn	$6,339,000	($50,906,000)	($44,567,000)
Open Air Stadium			
■ Boston/Cambridge	$9,729,000	($39,354,000)	($29,625,000) (1)
■ Worcester	$7,859,000	($39,276,000)	($31,417,000)
■ Lynn	$8,348,000	($28,906,000)	($20,558,000)
■ Foxboro	$6,702,000	($9,346,000)	($2,644,000) (2)
Convention Center			
■ Boston/Cambridge	($8,388,000)	($35,119,000)	($43,507,000) (1)

Source: Coopers & Lybrand, Bear Stearns

(1) By excluding the parking costs and the associated event related revenues, the annual debt and operating costs would be reduced to $51,995,000, $42,928,000, $19,084,000 and $33,288,000 for the megaplex, domed stadium, open air stadium and convention center projects respectively.

(2) Includes project costs associated with the renovation of Foxboro only and does not include costs associated with land acquisition and the purchase of the existing stadium.

[illegible]

[illegible]

	[illegible]		
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Pay-As-You-Go Financing

Projects that are relatively small or that are being financed in municipalities with rapidly growing tax bases are sometimes paid for directly out of appropriated funds as construction draw-downs are required. The great majority of facilities, however, are financed with long term debt, typically in the 20-to-30 year range, and paid for as the facility is used and its economic benefits are realized. The current economic climate in Massachusetts, the fiscal constraints on all levels of government and the difficulty of providing for large scale new revenues makes the pay-as-you-go option highly unlikely for this project. If a specific revenue stream is dedicated to the project and implemented prior to completion of the facilities, a portion of the funds could perhaps be used to reduce the amount of debt to be issued.

Long-Term General Obligation Borrowing or State Guaranteed Debt

Long-term bonding using the general obligation of the State either directly as part of the Commonwealth's capital program or as guaranteed debt of a certain public or quasi-public Authority(s) would provide the strongest credit and lowest borrowing costs for the project. The bonds would receive the same ratings as those of the State (currently an A from each of the three major credit rating agencies) and be repaid as part of the annual state budget. Legislative authorization would be required to direct the Commonwealth to enter into an agreement with the Authority(s) obligating the payment of debt service on the bonds. The Authority(s) could issue the bonds and own the facility under existing legislation.

Lease Appropriation Financing

This financing structure would entail a lease agreement with a financing entity requiring the Commonwealth to seek appropriations in each year's budget to pay the debt service on bonds issued for the project. Annual appropriation debt typically is rated a full step below the general obligation rating level of the government and thus incurs a higher interest rate. Recent stadium financings in Maryland and St. Louis have used lease appropriation debt to avoid certain legal and structuring restrictions that do not seem to apply to Commonwealth's project. Legislation would be required if any new financing entity is created to issue the bonds.

Revenue Bond Financing

A revenue bond could be secured by various taxes, fees or other revenues and would be rated based on the likelihood that the funds will be available for timely payment of

principal and interest on the bonds. Because collection levels of most tax and fee revenues may fluctuate over the life of the bonds, it is usually necessary to provide dedicated revenues initially equal to 1.5 times the annual debt service or more, depending on the stability of the revenue streams. Because they are relatively less secure, revenue bonds typically carry a higher rate of interest than similarly-rated general obligation debt. Legislation would be required to dedicate any taxes and fees to secure a bond issue.

5.4 Analysis of Potential Revenue Sources

As shown in Exhibit 5.2-1, the annual debt service on an A rated bond issue for $728.3 million in construction costs in today's market would be approximately $65.8 million, reflecting current interest rates that are near their lowest levels of the past decade. Because the bonds would probably not be issued until the mid-1990's, it is not possible to predict the level of interest rates, the state's credit rating and resulting debt service costs at that time. Each one-quarter percentage point difference in interest rates for a project of that size would affect the annual debt service costs by approximately $2.3 million.

The financing sources discussed below include a variety of potential additional public and private revenue streams that could offset the direct costs to the State and that have been used recently to support financings for convention center and sports facilities elsewhere in the United States. **The ability to provide significant funds from new sources is seriously constrained by the State's economic climate and the limited capacity for allocating certain taxes or fees to the project. The current economic situation in Massachusetts is likely to preclude any tax increases for the project.** In addition, many of the project revenue streams including ticket, concession, premium seating and other such sources will likely be allocated, wholly or in part, to the NFL franchise. However, in the interest of providing an overview of the financing structures for similar facilities, we have provided below a general discussion of certain tax revenue sources and what various percentage adjustments might yield. Many of the non-tax revenues and certain user-related fees may provide a significant source of funds to offset the general public contribution. Specific examples of how other cities and states have allocated existing revenues or provided incremental revenues for convention center/stadium facilities are discussed in the case study section.

Facility-Related Revenues

Convention centers typically incur significant operating shortfalls and are unable to contribute directly to debt service payments. There are, however, a number of potential

revenues that could flow from the use of the stadium portions of the facility or from a stand-alone football stadium. Realization of such funds will depend on the economic situation and negotiating position of the team when it is able to consider a move to a new facility and on the expected level of incremental revenues under discussion. The provisions of various team lease agreements vary widely within the NFL and typically involve trade-offs on the length of the lease, rental payments and any splitting of revenues from suites and club seats, concessions, parking, advertising, novelty sales, facility naming rights, exclusive vendor payments, ticket surcharges and broadcast rights. The team owners are usually in a strong position to retain most, if not all, of these revenues and often simply pay a fixed lease rental or one based on attendance. It is difficult to predict the likely outcome of such negotiations at this time, but the facility manager's interest is usually in obtaining the longest possible lease term. It may be possible to capture significant revenues from parking and cover much or all of the debt service for a separate garage, especially if it is heavily used by commuters or shoppers on non-game days.

Public-Private Financing Sources

A tax increment financing (TIF) would require enactment of legislation by the State legislature. TIF transactions are based on the incremental property tax value of the ancillary economic development projects that are triggered by a major new facility. The tax base of a defined area (the "TIF district") surrounding the project is frozen and any increases in the tax base are used to repay TIF bonds. It is unlikely that such a financing -- even if legally possible -- would yield a significant amount of bonding capacity given the continuing real estate downturn in the Boston area and the recent default experience of similar bonds in Colorado and California. The economics of any potential TIF financing are, of course, highly dependent on the development potential of the chosen site and its surrounding land.

An opportunity may exist for private funding assistance on the project through a major hotel company seeking to develop a large new hotel adjacent to the megaplex/stadium/convention center or even incorporated into the facility itself (as with the Skydome in Toronto). The hotel developer would pay a negotiated amount of equity to assist with the construction project and help to anchor additional ancillary development on the site. When more is known about the final project site and its potential for a hotel complex, this funding source could become a significant factor both in the viability of the project and in attracting additional development.

Several major projects in other cities obtained an equity contribution for other development rights surrounding the project. The Metrodome in Minneapolis, for example, supplemented new hotel, admissions and liquor taxes with a sale of such development rights. Depending on the dynamics of the selected site, the sale of

development rights could provide either an equity contribution to project costs or an ongoing payment to assist with operating losses.

Finally, it might be possible for a public or private pension fund either to purchase any taxable debt of the project or to provide credit enhancement for a portion of the bonds by collateralizing them with other securities in their portfolio (perhaps in exchange for a fee). This might be especially attractive to one of the building trade union pension funds in light of the thousands of jobs that would be created if the project is constructed.

Hotel-Motel Taxes

Hotel-motel taxes have been perhaps the single most often employed revenue source for convention centers throughout the United States. Major facilities -- including those in Chicago, Orlando, Los Angeles, New Orleans, Atlanta, Charlotte, Houston, Indianapolis, Miami, Minneapolis, Philadelphia, St. Louis and San Francisco -- have their debt service paid totally or in large part by dedicated hotel-motel tax revenues. Hotel-motel taxes are paid by visitors to the area and are thus seen as an indirect user fee for convention facilities and a politically acceptable funding source. Boston's hotel-motel tax is already allocated in part to offset the costs of the Hynes Convention Center. The existing hotel-motel tax in the Boston area is 9.7 percent, including a 5.7 percent state room occupancy tax and a 4 percent local room occupancy tax. According to the most recent bonding Official Statement for the Commonwealth, the State room occupancy tax during Fiscal Year 1991 totalled $56 million. Each additional one percentage point in this tax would yield approximately $9.8 million, assuming the increase does not reduce occupancy. Although Boston is currently in the lower end of the range of hotel-motel taxes among larger cities (doubling the tax would still place Boston below New York City's rate), a significant increase could harm the city's competitive position in attracting conventions, especially in light of certain other comparatively higher costs of meeting in Boston. While some adjustment may be economically and politically viable, any increase to the state or local occupancy tax would require legislation and would provide only a relatively small portion of the required funds.

Sales Taxes

A number of new or expanded facilities -- most notably convention centers throughout Illinois, New Comiskey Park in Chicago and the Texas Rangers ballpark in Arlington, Texas -- have been financed in large part using dedicated city, regional or state sales tax revenues, sometimes under laws permitting local option increases. Sales taxes provide strong credit structures because they are relatively predictable and tend to track both

inflation and economic growth. In Massachusetts, each cent of the existing sales tax currently provides approximately $325 to $350 million per year and could increase to an estimated $425 to $450 million by 1997. Compared to other states, Massachusetts' sales tax has a relatively narrow base with large categories of exemptions. For example, the Report on Tax Expenditures from the Appendix to the Fiscal Year 1992 Governor's budget recommendations estimated the Fiscal Year 1992 value of exemptions for sales of real property at $746 million, sales to tax-exempt organizations at $551 million, rentals of real property at $543 million and non-taxation of food at $396 million. While a sales tax increase or expansion of the base could provide a strong incremental revenue stream, **it is clearly not a viable option either economically or politically in the present circumstances**. Earmarking a portion of the current sales tax is at least a possibility, but would be difficult to implement and would not provide additional funding. Current Massachusetts laws do not provide for local option sales taxes.

Meals Taxes

Meals taxes have been used in several cities, particularly in the Midwest, to support the costs of convention and sports facilities. Indianapolis instituted a county-wide one percent tax on prepared meals and alcoholic beverages which currently provides over $8 million for the Hoosierdome (restaurants retain five percent of the tax as an administrative fee). Chicago recently enacted a special downtown meals tax district to provide a portion of the debt service for the $900 million McCormick Place expansion project. The statewide Massachusetts meals tax in Fiscal Year 1991, which is currently 5 percent, provided $292 million. A one percentage point increase in the meals tax would provide approximately $58 million annually, assuming no reduction in consumption resulting from the increases. Any increase would require legislation and would be highly unlikely to be instituted. Locally imposed taxes in Massachusetts may be impermissible under the Commonwealth's Constitution because of a requirement that all taxes be "proportionate and reasonable."

Other Revenue Sources

Another approach that seeks primarily to assess people visiting the area is to allocate taxes on car rentals and on those leaving the airport by taxi or bus. Such revenues are often more politically acceptable than broad-based taxes or fees, because they are generally not paid by local citizens. As part of the McCormick Place financing, the State of Illinois set a new 6 percent tax on all rental cars within Cook County and an airport departure tax of $2 per taxi and $1 per person travelling by bus from the airport. These revenues supplemented an increase of 2.5 percent on the gross receipts of area hotels and the 1 percent tax on meals in the special downtown taxing district. Together, these sources provided sufficient funds to fully offset the debt service on the

Metropolitan Pier and Exposition Authority's recent $868 million bond financing. Because of the potential for fluctuations in these revenues, the Authority obtained a higher rating and achieved significant savings by backing the bonds with a lien on State sales taxes.

Other Public Sector Contributions

There are a number of ways that facilities have obtained additional public funding or that governmental entities have directly reduced interest costs or borrowing requirements. These methods include:

- Purchase or donation of land;

- Funding of site improvements, parking garages or surrounding infrastructure using federal funds (e.g. from the Central Artery Project);

- Direct equity investments or construction of related facilities either directly or through an independent authority (as with the MBTA garage under the new Boston Garden); and

- Lending the government's credit by guaranteeing payment on new debt (Cuyahoga County, Ohio received a fee for providing such credit enhancement on a portion of the new arena and baseball stadium project in Cleveland).

Each of these techniques (other than the lending of credit) seem to be realistic options for the megaplex/stadium/convention center project, depending on the site that is chosen and its relation to facilities of other State Authorities. In particular, the state should explore the possible participation of the Massachusetts Convention Center Authority, the Massachusetts Port Authority, the Massachusetts Turnpike Authority and/or the Massachusetts Bay Transportation Authority in certain elements of the project.

Taxable Versus Tax-Exempt Debt

If the megaplex project had to be financed entirely with higher interest cost taxable bonds rather than with tax-exempt bonds, the additional interest over 30 years would exceed $250 million. The Tax Reform Act of 1986 restricted the use of tax-exempt debt for sports stadiums, but convention centers with a domed football stadium can qualify for tax-exempt debt if properly structured. The portion of the facility that should require the use of taxable debt would be any financing related to the construction of

luxury suites in the stadium. Our estimate is that approximately three percent of the megaplex facility's construction would have to use taxable bonding. A football-only stadium would require the use of taxable bonds for the entire facility, with the exception of related public infrastructure improvements. A convention center facility without accommodations for professional sports should be fundable entirely with tax exempt debt.

There are a variety of means with which to structure the financing for a megaplex, stadium project or convention center in the Boston metropolitan area while meeting the goals outlined in the beginning of this section. Additional analysis will be necessary as the State clarifies issues regarding the site, design, costs, team lease and potential for ancillary development. While substantial commitment of public funds is likely to be required, such an investment may be largely or wholly offset by the economic benefits that the project can provide for the citizens of Massachusetts. There is also the potential for private sector funding for the facility and, as planning continues, every avenue to maximize such private contributions should be explored.

COMMONWEALTH OF MASSACHUSETTS

MEGAPLEX, CONVENTION CENTER, and STADIUM FEASIBILITY ANALYSIS

FINAL REPORT

VOLUME II

Site Analysis, Project Costs and Concept Plans

February 5, 1993

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PREFACE

In July and August of 1992, the Division of Capital Planning and Operations (DCPO) and the Executive Office of Economic Affairs (EOEA) of the Commonwealth of Massachusetts carried out a REQUEST FOR SITES process to elicit information regarding possible sites for a potential multi-purpose sports/exhibition hall complex in Massachusetts. Twenty sites in seventeen communities were nominated.

A two phase screening process based on objective criteria and increasing level of detail at each step was used to screen the twenty sites down to a short list of sites for further consideration as a 65,000 to 75,000 seat stand alone stadium (open air or domed), and to evaluate the sites which met the criteria for a stand alone convention center or a combination convention center/stadium, referred to as a "megaplex."

The Phase One Screening Process was based upon the information provided by the site proponents in the July/August, 1992, RFS process. The six sites which survived the Phase One "fatal flaw" screening process are:

- Boston - South Bay
- Boston - State Hospital
- Cambridge
- Foxboro
- Lynn
- Worcester

The two sites which also meet the initial criteria for consideration as convention center or as a "megaplex" based on siting and market criteria are:

- Boston - South Bay
- Cambridge

In Phase Two of site selection more detailed criteria have been established and used to rate the sites and rank them numerically for stadium purposes, and to provide additional information on the sites for convention center and megaplex purposes.

1. PHASE I: SCREENING PROCESS

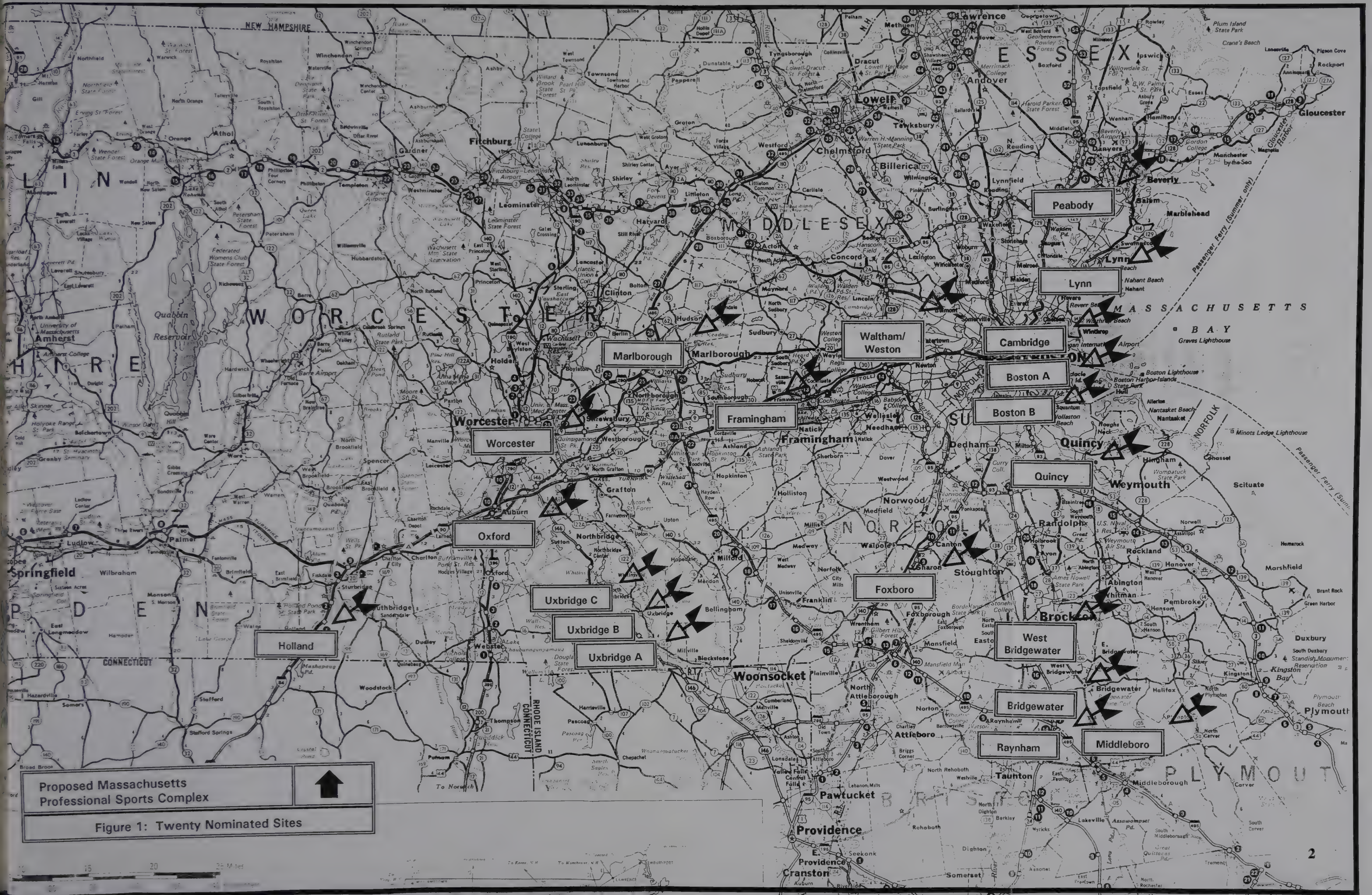
1.1 Proposed Sites

In response to the DCPO and EOEA REQUEST FOR SITES, twenty sites were proposed for consideration as locations for the proposed Massachusetts Professional Sports Complex. The sites are located in the following communities:

- Boston (Two)
- Bridgewater
- Cambridge
- Foxboro
- Framingham
- Holland
- Lynn
- Marlborough
- Middleboro
- Oxford/Auburn
- Peabody
- Quincy
- Raynham
- Uxbridge (Three)
- Waltham/Weston
- West Bridgewater
- Worcester

The seventeen communities in which the twenty sites are located are shown in **Figure 1**, below. Later in the process the Fort Devens site in Ayer, Shirley and Harvard was also recommended for study. Designated a National Priority Site under the Federal Superfund law, the site automatically failed the critical flaw analysis of Phase One and was not continued for further study. Refer to **Figures 2-19,** following Section 1.5, "Narrative Description of Sites and Phase One Screening Results," to see each individual site on 1:25000 scale USGS quadrangle map sheets.

Two of the sites, one of the Boston sites and the Cambridge site, are located adjacent to the downtown Boston core. The second Boston site is centrally located within the City of Boston between the Dorchester, Jamaica Plain and Roslindale neighborhoods. Four of the sites, in Lynn, Peabody, Quincy and Waltham, are located within the metropolitan Boston area, with the last three adjacent to the Route 128 circumferential highway. Two sites, the Framingham and Marlborough sites, are located in the Metrowest area, and six sites, those in Worcester, Oxford, Holland and Uxbridge (with three proposed sites) are in central Massachusetts. Four sites, in Bridgewater, West Bridgewater, Raynham and Middleboro, are located in southeastern Massachusetts, with the Foxboro site located southwest of Boston.


Peabody
Lynn
Cambridge
Boston A
Boston B
Quincy
Waltham/ Weston
Marlborough
Framingham
Worcester
Oxford
Uxbridge C
Uxbridge B
Uxbridge A
Holland
Foxboro
West Bridgewater
Bridgewater
Raynham
Middleboro
ESSEX
MIDDLESEX
WORCESTER
NORFOLK
PLYMOUT
BRISTOL
MASSACHUSETTS BAY
NEW HAMPSHIRE
CONNECTICUT
RHODE ISLAND
Springfield
Worcester
Boston
Providence
Lowell
Lawrence
Brockton
Quincy
Fitchburg
Gloucester
Plymouth
Woonsocket
Pawtucket
Taunton
Passenger Ferry (Summer only)

Proposed Massachusetts Professional Sports Complex

Figure 1: Twenty Nominated Sites

Four of the sites, in Boston, Cambridge, Lynn and Worcester, are in urban settings and currently in commercial and industrial use. The second Boston site is located in a primarily residential and institutional area consisting of hospital, cemeteries, parks and nearby homes. Seven sites, Foxboro, Framingham, Marlborough, Middleboro, Peabody, Quincy and Waltham/Weston are in suburban locations of developing office parks and highway commercial activities. Six sites, Bridgewater, Holland, Oxford, Raynham, Uxbridge, and West Bridgewater, are open sites in largely rural areas.

1.2 Site Evaluation Process

The twenty sites were first evaluated using a three step screening process based on evaluation criteria derived from industry norms. The first phase involved an initial screening review of all twenty sites utilizing the four broad threshold criteria identified in the REQUEST FOR SITES, namely (1) Transportation, (2) Environment, (3) Parcel Size and Configuration, and (4) Location. The objective was to identify the most promising sites to be evaluated in greater detail in the second phase of the site selection process. Site description details were taken from the information submitted by applicants in the REQUEST FOR SITES. The evaluation was based on established secondary information sources such as the National Wetlands Inventory mapping for wetlands, Federal Emergency Management Agency mapping for floodplains, etc. Sites which present major physical, transportation, or other impediments to expeditious and successful facility development were eliminated from further consideration at this step.

In Phase Two of the site selection process, more detailed criteria were established and used to rank the six sites numerically for the concept of a stand alone stadium. Concept plans were developed for four sites. Finally, two sites were evaluated for the convention center and megaplex options and concept plans prepared.

	Number of sites	
Site Evaluation	Evaluation Sites	Final Sites
Site Evaluation: Screening Process	20	6
Stadium Only: Numerical Ranking	6	4
Convention Center and Megaplex: Concept Plans	2	2

1.3 Phase One: Screening Process

All twenty of the nominated sites were studied in order to eliminate those which fail to meet minimally acceptable criteria from the following four standpoints:

1. Transportation
2. Environment
3. Parcel Size and Configuration
4. Location

The purpose of this stage of the site evaluation process was to eliminate those sites that:

- lack one or more elements of transportation infrastructure that are essential to a successful project.
- have environmental characteristics that make a successful project either problematic or would lead to a protracted and expensive environmental permitting process with an uncertain outcome.
- are substandard from either a parcel size or configuration standpoint.
- lack adjacent demographic characteristics and facilities that are essential for a major sports complex to be a success.

The sites were not numerically ranked with respect to these criteria. Rather, sites were eliminated if they did not fulfill each of the minimum requirements described below. As such the rating has been done on a simple **YES/NO** basis. The specific criteria used to evaluate each of the twenty sites are as follows:

1. Transportation Criteria:

In order to survive the Phase One site screening process, a site must either have the following transportation infrastructure in place or there must be an approved Federal Record of Decision (ROD) and State Certificate to develop this infrastructure under the respective environmental review processes:

- Access to a limited access highway of interstate standard within one-half mile of the site or adjacent to a state numbered arterial roadway
- Fixed rail passenger line within one-half mile of site.
- Capacity for the construction of 15,000 to 20,000 surface or structured parking spaces.

2. Environmental Criteria:

In order to survive the Phase One screening process, each site must meet the following criteria:

- The site must have a minimum of 40 to 60 contiguous acres of upland. The definition of "upland" is land not regulated by Section 404 of the Federal Clean Water Act or land not requiring fill pursuant to the Massachusetts Wetlands Protection Act; in other words, land that is not wetland.

- No portion of the site may be a designated National Priority Site under the Federal Superfund law.
  - No site may be located within an Area of Critical Environmental Concern.
  - Sites must have a minimum of 40 to 60 acres of land not located in the 100 year floodplain, as defined by the Federal Emergency Management Agency.

3. Parcel Size and Configuration Criteria:

In order to survive the Phase One screening process, a site must meet the following criteria:

- The site must include a minimum of 40 contiguous and accessible acres of land to accommodate construction.
- The site must have an area at least 1000 feet long and 700 feet wide for the facility "footprint".

4. Location Criteria:

In order to survive the Phase One screening process, the site must meet the following criteria:

- The site must be located within 50 miles travel distance of the primary patron base for the intended events.
- The site must be located within an urbanized area over 100,000 population, as defined by the 1990 US Census. (As well as providing a local patron base, a local population base is needed to staff and maintain the facility.)
- The surrounding areas should support, or at least not prohibit, the anticipated events to be held at the facility. (For example, noise impact from an airport, odor from an industrial complex, fog from adjacent low lying areas, etc., are identifiable factors which would not support such a facility)
- The site should not create an adverse effect on the surrounding properties due to the nature of the events to be held in the facility. (For example, impact of facility noise on residential areas, parklands, or wildlife refuges, expected traffic peaks on nearby community facilities, etc., are identifiable impacts of such a facility.)

The critical flaw screening was done on a **YES/NO** basis. Each of the twenty sites that met a criterion were given a **YES** for that particular parameter. Conversely, those sites which did not meet the criterion were given a **NO**. A **NO** in for any one of the criteria is sufficient to eliminate the site from further consideration. As such, the result of the Phase One process was to eliminate sites which failed to meet the criteria described above.

1.4 Summary of Phase One Screening Results

The following six sites met all Phase One criteria:

- Boston A
- Boston B
- Cambridge
- Foxboro
- Lynn
- Worcester

The following fourteen sites did not meet the Phase One screening criteria.

- Bridgewater
- Framingham
- Holland
- Marlborough
- Middleboro
- Oxford/Auburn
- Peabody
- Quincy
- Raynham
- Uxbridge A
- Uxbridge B
- Uxbridge C
- Waltham/Weston
- West Bridgewater

The Phase One ratings of the twenty nominated sites are summarized in **Table 1**, while the specific factors causing sites to fail Phase One screening are shown in **Table 2**.

In summary, twelve of the fourteen sites (all except Middleboro and Quincy) which did not meet Phase One screening criteria were more than two miles from a fixed rail line which is active or undergoing restoration. Most of the sites which did not pass Phase One Screening were five or more miles away from a rail line which is active or undergoing restoration.

Four of the sites (Bridgewater, Holland, Middleboro, and Waltham/Weston) included substantial wetlands.

Table 1
PHASE ONE RATINGS OF TWENTY NOMINATED SITES

SITE	TRANSPORTATION	ENVIRONMENT	PARCEL	LOCATION
BOSTON A	Y	Y	Y	Y
BOSTON B	Y	Y	Y	Y
BRIDGEWATER	N	N	Y	N
CAMBRIDGE	Y	Y	Y	Y
FOXBORO	Y	Y	Y	Y
FRAMINGHAM	N	Y	Y	Y
HOLLAND	N	N	Y	N
LYNN	Y	Y	Y	Y
MARLBOROUGH	N	Y	Y	Y
MIDDLEBORO	N	N	Y	N
OXFORD/AUBURN	N	Y	Y	Y
PEABODY	N	Y	Y	Y
QUINCY	N	Y	Y	Y
RAYNHAM	N	Y	Y	Y
UXBRIDGE A	N	Y	Y	Y
UXBRIDGE B	N	Y	Y	Y
UXBRIDGE C	N	Y	Y	Y
WALTHAM	Y	N	Y	Y
WEST BRIDGEWATER	N	Y	Y	Y
WORCESTER	Y	Y	Y	Y

CRITERIA:

1. **Transportation:**	Highway, transit, parking
2. **Environment:**	Wetlands, compatibility to adjacent uses, hazardous waste
3. **Parcel:**	Size and configuration
4. **Location:**	Demographics, adjacent facilities

Y = Yes, site meets minimum criteria
N = No, site does not meet minimum criteria

Table 2
FACTORS CAUSING SITES TO FAIL PHASE ONE SCREENING

- Bridgewater
- Framingham
- Holland
- Marlborough
- Middleboro
- Oxford/Auburn
- Peabody
- Quincy
- Raynham
- Uxbridge A,B,C
- Waltham/Weston
- West Bridgewater

SITE	TRANSPORTATION	ENVIRONMENT	PARCEL	LOCATION
BRIDGEWATER	R	W,F		E
FRAMINGHAM	R			
HOLLAND	R	W		U,E
MARLBOROUGH	R			
MIDDLEBORO	R	W		U
OXFORD/AUBURN	R			
PEABODY	R			
QUINCY	R			
RAYNHAM	H,R			
UXBRIDGE A	R			
UXBRIDGE B	R			
UXBRIDGE C	R			
WALTHAM		W,F		
WEST BRIDGEWATER	R			

CRITERIA KEY

1.	**Transportation:**	Highway, transit, parking
	H = Highway	Site does not have access to highway within one-half mile or adjacency to state numbered arterial
	R = Rail	Site is not within one-half mile of fixed passenger rail
	P = Parking	Site does not have the capacity for construction of 15,000 to 20,000 parking spaces
2.	**Environment:**	Wetlands, compatibility to adjacent uses, hazardous waste
	W = Wetlands	Site does not have 40-60 contiguous acres of upland
	S = Superfund	Site is designated a National Priority Site
	A = ACEC	Site is located within an Area of Critical Environmental Concern
	F = Floodplain	Site does not have 40-60 contiguous acres outside the floodplain
3.	**Parcel:**	Size and configuration
	B = Bldg. area	Site does not have minimum 40 acres contiguous, accessible area
	F = Footprint	Site does not have minimum 1000 x 700 foot facility footprint
4.	**Location:**	Demographics, adjacent facilities
	D = Distance	Site is not located within 50 miles of patron base
	U = Urbanized	Site is not within urbanized area over 100,000 population
	S = Support	Surroundings do not support/prohibit events
	E = Effect	Site does not adversely affect surroundings

1.5 Narrative Description of Sites and Phase One Screening Results

BOSTON:

A. The "South Bay Gateway" is a 42 acre site at the junction of I-90 (Mass Turnpike) and I-93/Route 3 (Southeast Expressway) in the South Bay section of South Boston. The site is about 70% privately owned and in use by food wholesalers, and about 30% municipally owned and used for municipal vehicle repair, towing storage and a dormant city incinerator. The site is accessible to MBTA Red Line Stations at Andrew and Broadway. The site is also served by the MBTA Midland Branch commuter rail line, which was used for passenger service during construction of the Southwest Corridor, and is maintained to test repair vehicles. The site is adjacent to the Old Colony Railroad Line, which is in the process of restoration, and the Massachusetts Avenue connector to the South Boston Haul, or Bypass, Road, which is under construction as part of the Central Artery project.

Phase One Screening Results: The South Bay Gateway passed all Phase One screening criteria.

B. The 195 acre Boston State Hospital site is located between the Dorchester, Jamaica Plain and Roslindale neighborhoods of Boston and is accessible via Morton Street (Route 203), the American Legion Highway and Blue Hill Avenue (Route 28). The site is in an area of cemeteries and parks, including Franklin Park, with residential areas nearby. The site itself contains a series of institutional buildings formerly housing the Boston State Hospital and most recently used to provide social services. MBTA Forest Hills station on the Orange Line as well as the AMTRAK and MBTA Shore Line and MBTA Midlands Branch railroad lines are nearby.

Phase One Screening Results: The Boston State Hospital site passed all Phase One screening criteria.

BRIDGEWATER:

This privately owned 145 acre site is bounded by Route 104 on the north, Route 24 on the east and Route I-495 on the south. The site has previously been proposed for the Indian Mound Office Park and Bridgewater Crossing Mall.

Phase One Screening Results: The Bridgewater site did not pass Phase One screening due to its location approximately 3 1/2 miles from the nearest commuter rail passenger line (Old Colony) and the presence and location on the site of extensive wetlands and 100 year floodplain associated with Titicut Swamp. In addition, a proposed sports complex would be likely to conflict with the surrounding land uses, particularly the Hockomock Swamp Wildlife Management Area.

CAMBRIDGE:

The 46 acre site located in East Cambridge with portions in Somerville and the Charlestown section of Boston is known as the Boston and Maine Railroad Piggyback Yard. The MBTA Green Line and the McGrath Highway (Routes 28 and 38) border the site on the west; Route I-93, the MBTA Orange Line and MBTA North Side Commuter Rail Lines border the site on the east; and the Gilmore Bridge borders the site on the south. The site has previously been proposed for "Northpoint", a mixed use development of housing, office space, retail space and public park.

Phase One Screening Results: The Cambridge site passed all Phase One screening criteria.

FOXBORO:

The 336 acre privately owned site is the location of Foxboro Stadium and Foxboro Race Track. The site is bordered by Route 1 and a spur from the MBTA Attleboro commuter rail line which is used for train service from South Station to the Stadium for selected events.

Phase One Screening Results: The Foxboro site passed all Phase One screening criteria.

FRAMINGHAM:

This 150 acre site is located at the intersection of I-90 (the Massachusetts Turnpike) and Route 9. In private ownership, the site has been planned for a mixed use park called "9/90 Crossing", consisting of two million square feet of office space, hotel and retail space. The AMTRAK rail line connecting Boston with Framingham and Worcester, with restoration of commuter rail service underway, is across the Massachusetts Turnpike from the site.

Phase One Screening Results: The Framingham site did not pass all Phase One screening criteria. The rail line within half-mile of the Framingham site is the Leominster Branch, which is not presently used or programmed for passenger rail service. The line was initially identified as the Framingham branch line on which an extension of commuter rail service is planned to Worcester by 1994. As a result, the Framingham site is not within half-mile of active or programmed fixed rail commuter service and does not pass the Phase One screening as was preliminarily reported.

HOLLAND:

This 236 acre site is located on the Connecticut/Massachusetts border between I-84 and Mashapaug Road, the connecting road to I-90, the Massachusetts Turnpike. The open site is in private ownership.

Phase One Screening Results: The Holland site did not pass Phase One screening criteria due to its distance from fixed rail passenger service, the presence and location on the site of wetlands associated with the Leadmine Brook system, and location outside an urbanized area. In addition, surrounding land uses such as Hamilton Reservoir, Nipmuck State Forest, and Bigelow Hollow State Park present incompatibility problems.

LYNN:

The 65 acre site is located north of the Saugus River between Route 1A (the Lynnway) and Lynn Harbor. In private ownership, the land is used for commercial and industrial activities or is vacant. The MBTA Eastern Branch Commuter Rail Line is across Route 1A from the site and the MBTA Blue Line Wonderland Station is about three miles from the site.

Phase One Screening Results: The Lynn site passed all Phase One screening criteria.

MARLBOROUGH:

The 90 acre site is located at the junction of I-495 and I-290. This partially completed office park is in private ownership.

Phase One Screening Results: The Marlborough site did not pass Phase One screening criteria due to its distance from passenger rail service (roughly 5 miles from the Framingham rail line). In addition, development of the site would be problematic due to the proximity of wetlands and 100 year floodplain of the Assabet River.

MIDDLEBORO:

The 130 acre site is located north of the Middleboro Rotary, Routes 44 and I-495 and west of Routes 18/28. In private ownership, the site consists of the incomplete Commerce Park. The site is about two miles from the Middleboro line on the Old Colony commuter rail line which will be in active service in 1996.

Phase One Screening Results: The Middleboro site did not pass Phase One screening due to its approximate 2 mile distance from the nearest fixed passenger rail line (Old Colony), the presence and location of wetlands on the site according to the National Wetlands Inventory mapping, and location outside an urbanized area.

OXFORD/AUBURN:

This 134 acre site is located between I-395 and the Providence & Worcester Railroad on the Oxford and Auburn town line (119 acres in Oxford and 15 acres in Auburn). In private ownership, the site is subdivided for mixed use development including a hotel.

Phase One Screening Results: The Oxford/Auburn site did not pass Phase One screening due to distance from fixed passenger rail. In addition, development would be difficult due to the presence on-site of Chimney Pond, and Wellington Brook and its associated wetlands.

PEABODY:

This 138 acre site is located in the "Golden Triangle" bounded by Route 1 on the west, Route 128 on the south and Route 95 on the north and east. In public and private ownership, this undeveloped site is bordered by suburban office parks in a Designated Development District zone.

Phase One Screening Results: The Peabody site did not pass Phase One screening due to its distance, about 5 miles, from fixed passenger rail.

QUINCY:

This 160 acre site is located northwest of the intersection of the Southeast Expressway (Routes I-93/3) and Route 128. Called Yankee Heights, this partly developed mixed use commercial, hotel and residential park is privately owned and occupies the site of former granite quarries.

Phase One Screening Results: The Quincy site did not pass Phase One screening due its 1.5 mile distance from the Quincy Adams station on the MBTA Red Line. The standing water in the quarries on the site would make the site difficult to develop.

RAYNHAM:

This 180 acre wooded site is located west of Locust Street and south of King Street between Routes 24 and I-495 and north of Route 44. The site is privately owned and about 5.5 miles from the Middleboro station on the Old Colony commuter railroad line which will be in active service in 1996.

Phase One Screening Results: The Raynham site did not pass Phase One screening due to its distance from a fixed rail commuter line and location greater than one-half mile from Route 44.

UXBRIDGE:

A. This 262 acre sand and gravel operation is located between Routes 146 and 146A on the Massachusetts/Rhode Island state border. The site is privately owned.

Phase One Screening Results: The Uxbridge A site did not pass Step One screening due to its distance from fixed rail service. The occurrence on-site of Ironstone Reservoir, several isolated wetlands, and two streams and their associated wetlands would present significant environmental problems.

B. This 85 acre dairy farm near Route 146 is bordered by the Blackstone River and Route 146A. In private ownership, the site is being converted to the Quaker Industrial Park.

Phase One Screening Results: The Uxbridge B site did not pass Phase One screening due to its distance from fixed rail service.

C. This 309 acre wooded site is located at the intersection of Route 146 and Route 16. Owned by the FDIC and a private owner, the site is zoned industrial and agricultural.

Phase One Screening Results: The Uxbridge C site did not pass Phase One screening due to its distance from fixed rail service.

WALTHAM/WESTON:

The 100 acre quarry site is located straddling the Waltham/Weston border. Bounded on the east by Route 128, the north by Route 117 and the south by Route 20, the privately owned site is adjacent to the Fitchburg Line of the MBTA commuter rail system and is near Kendall Green station.

Phase One Screening Results: The Waltham/Weston site did not pass Phase One screening due to the presence of floodplain and substantial wetlands, including Stony Brook which bisects the site.

WEST BRIDGEWATER:

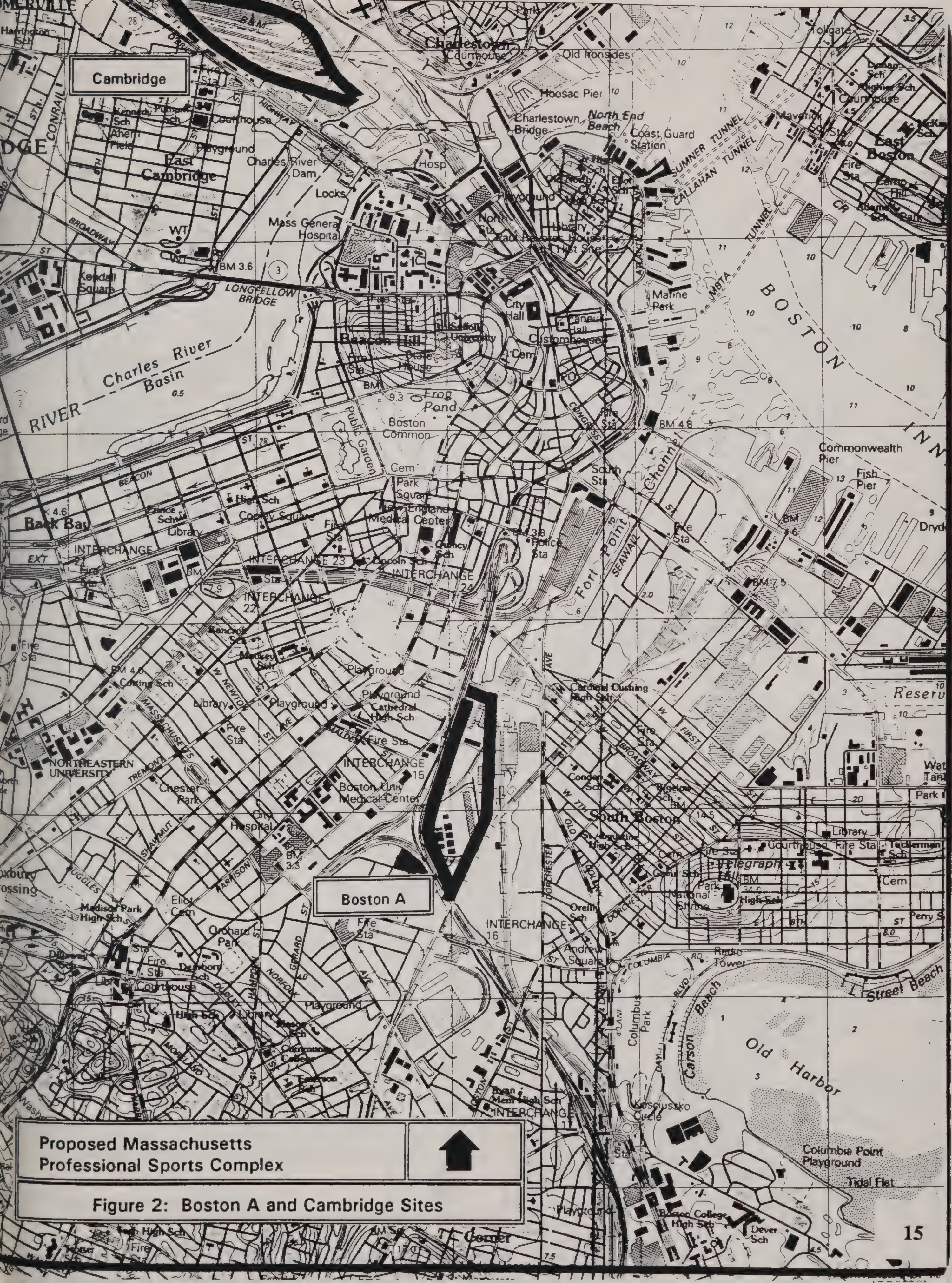
This 136 acre wooded site is in private ownership and is located adjacent to Route 24. Access to the site is via Route 24 to Route 106 to Manley Street to West Street. The site is adjacent to the West Bridgewater State Forest.

Phase One Screening Results: The West Bridgewater site did not pass Phase One screening due to its 2.5 mile distance from a fixed rail commuter line. The location and orientation of the wetlands on the site would pose difficulties to development, and adjacency to the West Bridgewater State Forest is a concern.

WORCESTER:

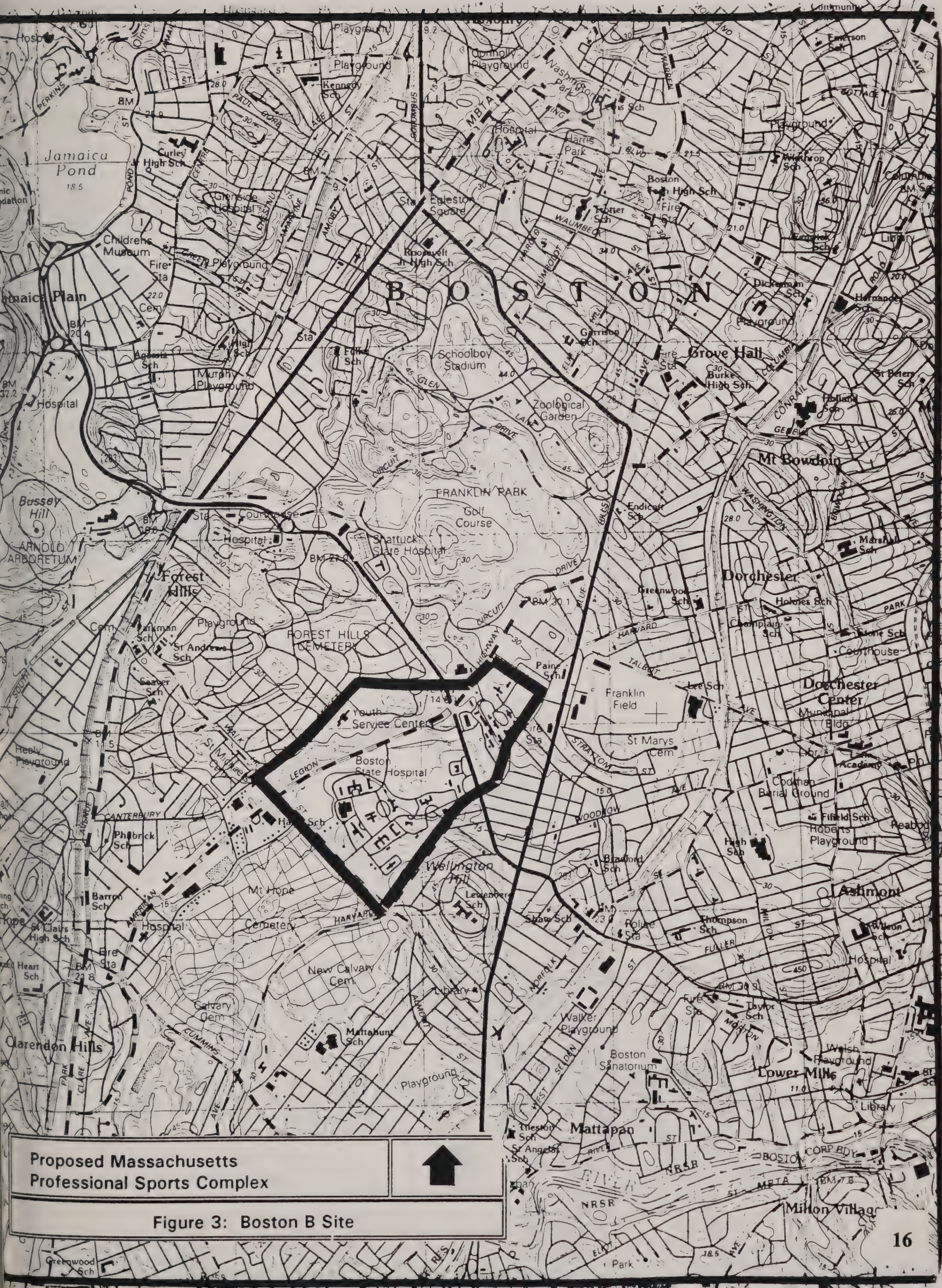
This approximately 81-86 acre site is located in downtown Worcester adjacent to Washington Square between Route I-290 and the Providence and Worcester railroad tracks. In private and public ownership, the site at present is largely used for industrial and commercial activities or is vacant. Plans are to redevelop adjacent Union Station, currently served by AMTRAK passenger rail, into an intermodal transportation center providing commuter and intercity rail and bus service.

Phase One Screening Results: The Worcester site passed all Phase One screening criteria.


Cambridge
Boston A
East Cambridge
Charlestown
East Boston
Charles River Basin
Beacon Hill
Boston Common
Back Bay
South Boston
Northeastern University
Boston Harbor
Old Harbor
Fort Point Channel
Kendall Square
Longfellow Bridge
Mass General Hospital
City Hall
Copley Square
Telegraph Hill
Andrew Square
Columbus Park
Carson Beach
Columbia Point Playground
Sumner Tunnel
Callahan Tunnel
Interchange 15
Interchange 16
Interchange 22
Interchange 23
Interchange 24
Boston Univ Medical Center
City Hospital
Roxbury Crossing
Madison Park High Sch
Kosciuszko Circle
Commonwealth Pier
Fish Pier
L Street Beach

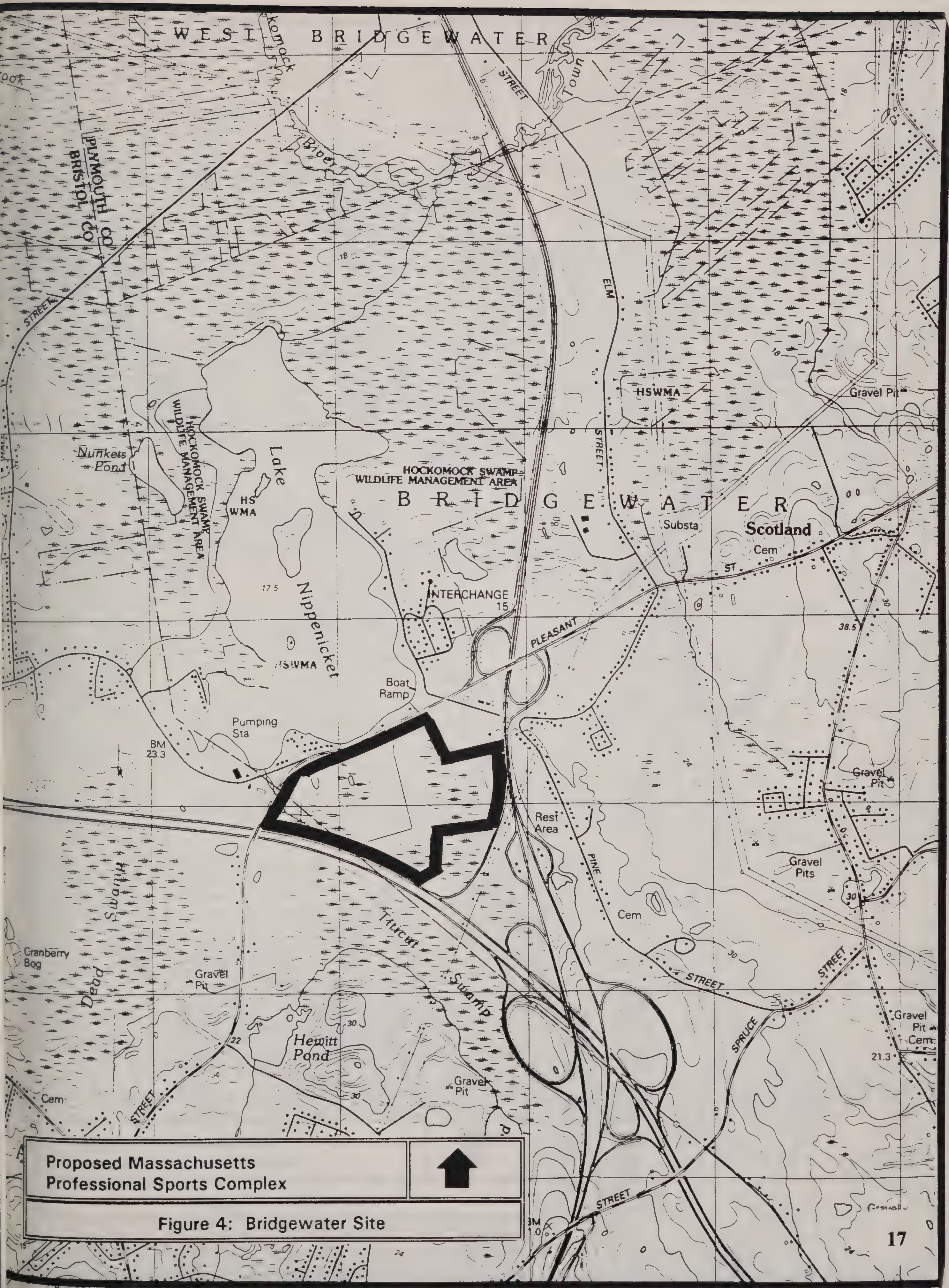
Proposed Massachusetts
Professional Sports Complex

Figure 2: Boston A and Cambridge Sites


BOSTON
Jamaica Pond
Jamaica Plain
Childrens Museum
Curley Jr High Sch
Glenside Hospital
Egleston Square
Roosevelt Jr High Sch
Schoolboy Stadium
Zoological Garden
FRANKLIN PARK
Golf Course
Shattuck State Hospital
Bussey Hill
ARNOLD ARBORETUM
Forest Hills
FOREST HILLS CEMETERY
Youth Service Center
Boston State Hospital
Wellington Hill
Mt Hope Cemetery
New Calvary Cem
Calvary Cem
Clarendon Hills
Mattahunt Sch
Grove Hall
Burke High Sch
Mt Bowdoin
Dorchester
Dorchester Center
Franklin Field
St Marys Cem
Codman Burial Ground
Ashmont
Boston Sanatorium
Mattapan
Lower Mills
Milton Village
Walker Playground
Boston Tech High Sch
Harris Park
Washington Park
MBTA
CONRAIL
BOSTON CORP BDY
NRSR

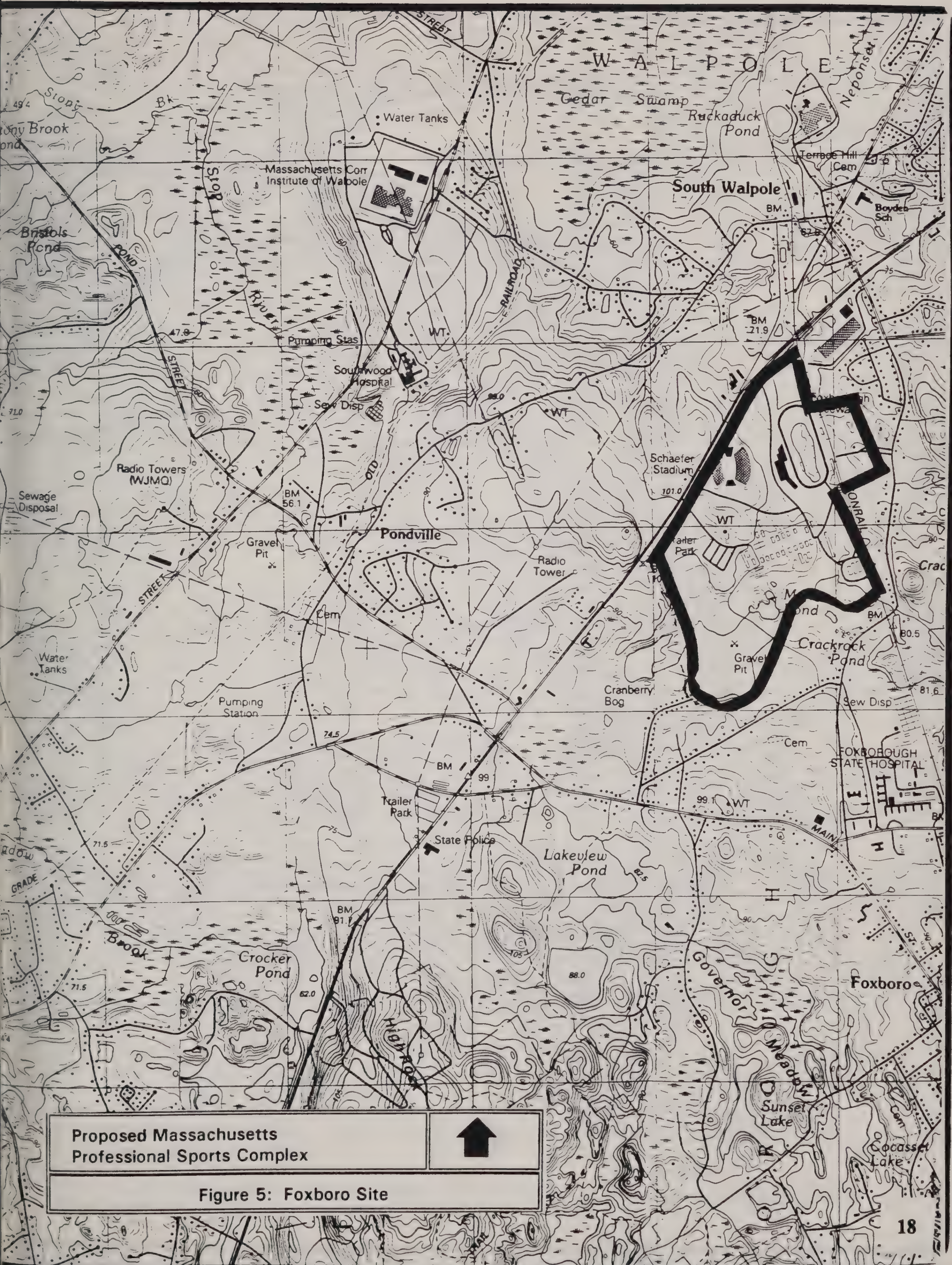
Proposed Massachusetts
Professional Sports Complex

Figure 3: Boston B Site


WEST BRIDGEWATER
Hockomock River
STREET
Town
PLYMOUTH CO
BRISTOL CO
ELM STREET
HSWMA
Gravel Pit
Nunkets Pond
HOCKOMOCK SWAMP WILDLIFE MANAGEMENT AREA
HS WMA
Lake Nippenicket
BRIDGEWATER
Substa
Scotland
Cem
ST
INTERCHANGE 15
PLEASANT
HSWMA
Boat Ramp
Pumping Sta
BM 23.3
Rest Area
PINE
Gravel Pits
Titicut Swamp
Dead Swamp Hill
Cranberry Bog
Gravel Pit
Cem
STREET
SPRUCE
STREET
Hewitt Pond
Gravel Pit
Cem
STREET
Gravel Pit
Cem
21.3
38.5
18
17.5
24
30
22

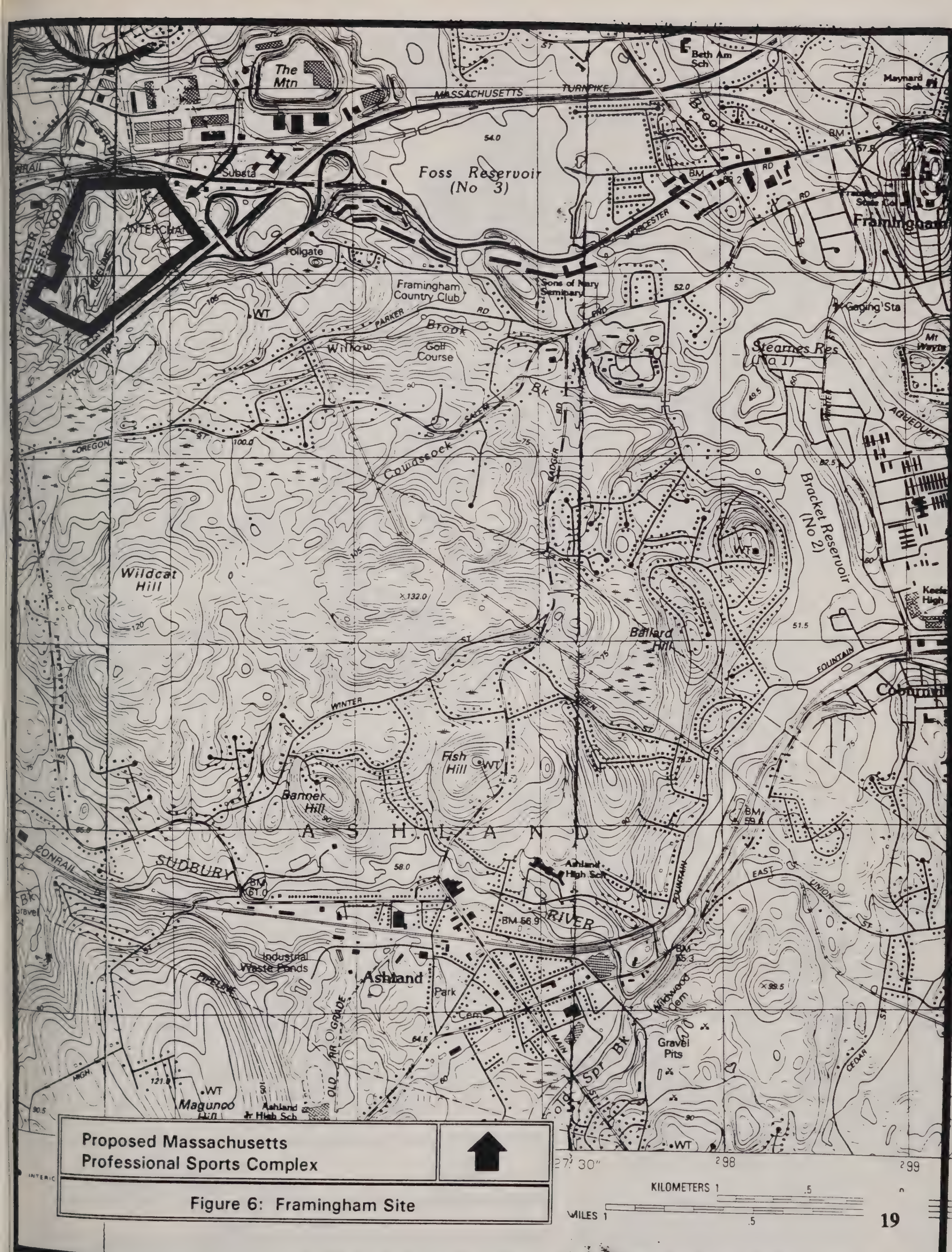
Proposed Massachusetts
Professional Sports Complex

Figure 4: Bridgewater Site


WALPOLE
Cedar Swamp
Ruckaduck Pond
Neponset
Terrace Hill Cem
South Walpole
Boyden Sch
Stony Bk
Water Tanks
Massachusetts Corr Institute of Walpole
Bristols Pond
POND
STREET
RAILROAD
Pumping Stas
Southwood Hospital
Sew Disp
WT
Schaefer Stadium
CONRAIL
Radio Towers (WJMQ)
Sewage Disposal
BM 56.1
Pondville
Gravel Pit
Radio Tower
Trailer Park
Cem
Crackrock Pond
Cranberry Bog
Water Tanks
Pumping Station
BM
99
Trailer Park
State Police
Lakeview Pond
FOXBOROUGH STATE HOSPITAL
MAIN
Crocker Pond
Brook
GRADE
High Rock
Governor Meadow
Sunset Lake
Cocasset Lake
Foxboro

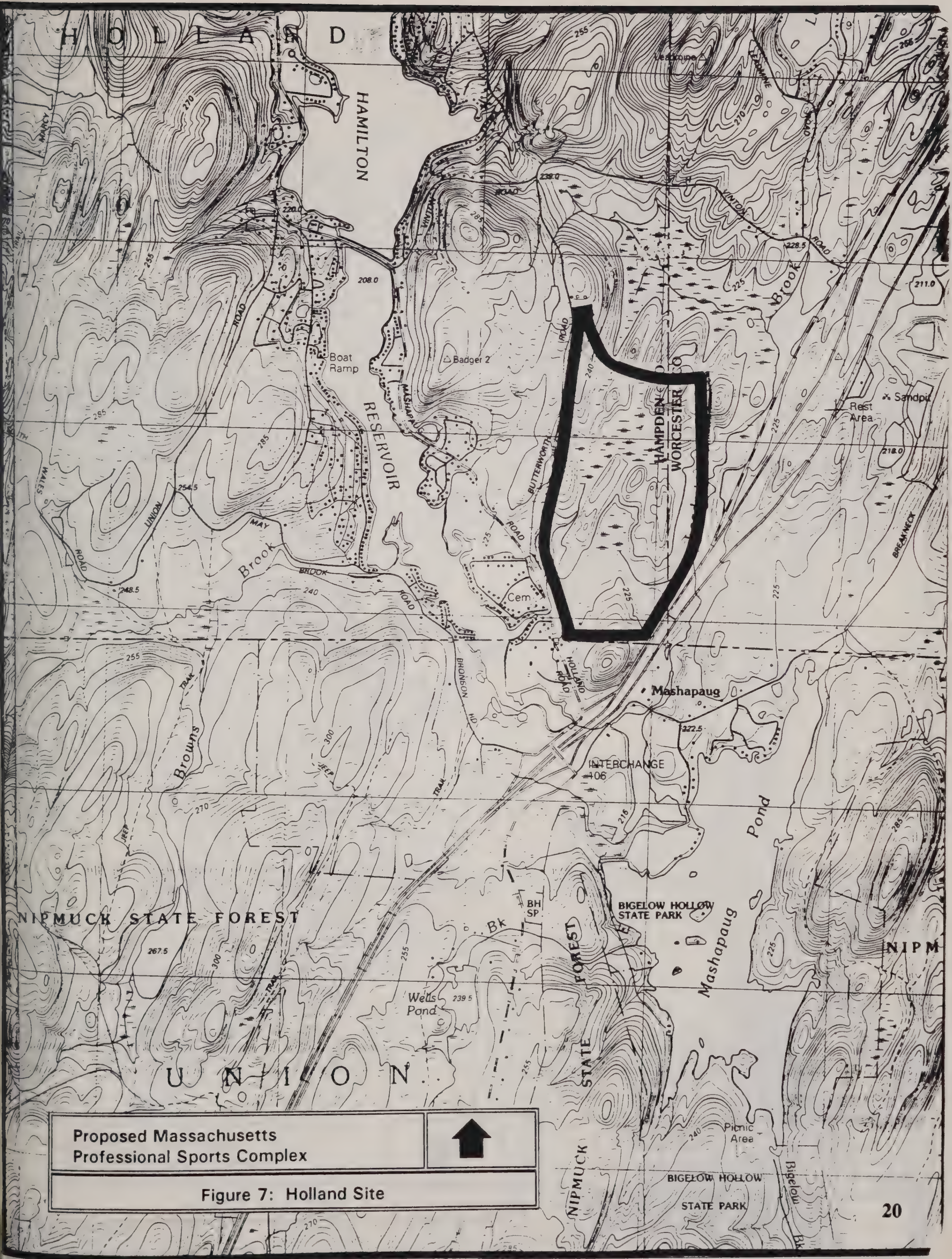
Proposed Massachusetts
Professional Sports Complex

Figure 5: Foxboro Site


The Mtn
MASSACHUSETTS TURNPIKE
Beth Am Sch
Maynard Sch
Brook
Foss Reservoir (No 3)
Substa
INTERCHANGE
Tollgate
Framingham Country Club
Sons of Mary Seminary
Framingham State Col
Framingham
Gaging Sta
Stearnes Res (No 1)
AQUEDUCT
Bracket Reservoir (No 2)
Mt Wayte
PARKER RD
Willow Brook
Golf Course
Cowassock Bk
SALEM
OREGON
Wildcat Hill
132.0
Ballard Hill
FOUNTAIN
Keefe High
Cochituate
WINTER ST
Fish Hill
Banner Hill
A S H L A N D
SUDBURY
RIVER
CONRAIL
Ashland High Sch
EAST UNION ST
BM 61.0
BM 56.9
BM 55.3
Industrial Waste Ponds
Ashland
Park
Cem
OLD RR GRADE
PIPELINE
Gravel Pits
Wildwood Cem
CEDAR
HIGH
Magunco Hill
Ashland Jr High Sch
Old Spr Bk
MAIN ST
WT
27' 30"
298
299
KILOMETERS 1
.5
0
MILES 1
.5

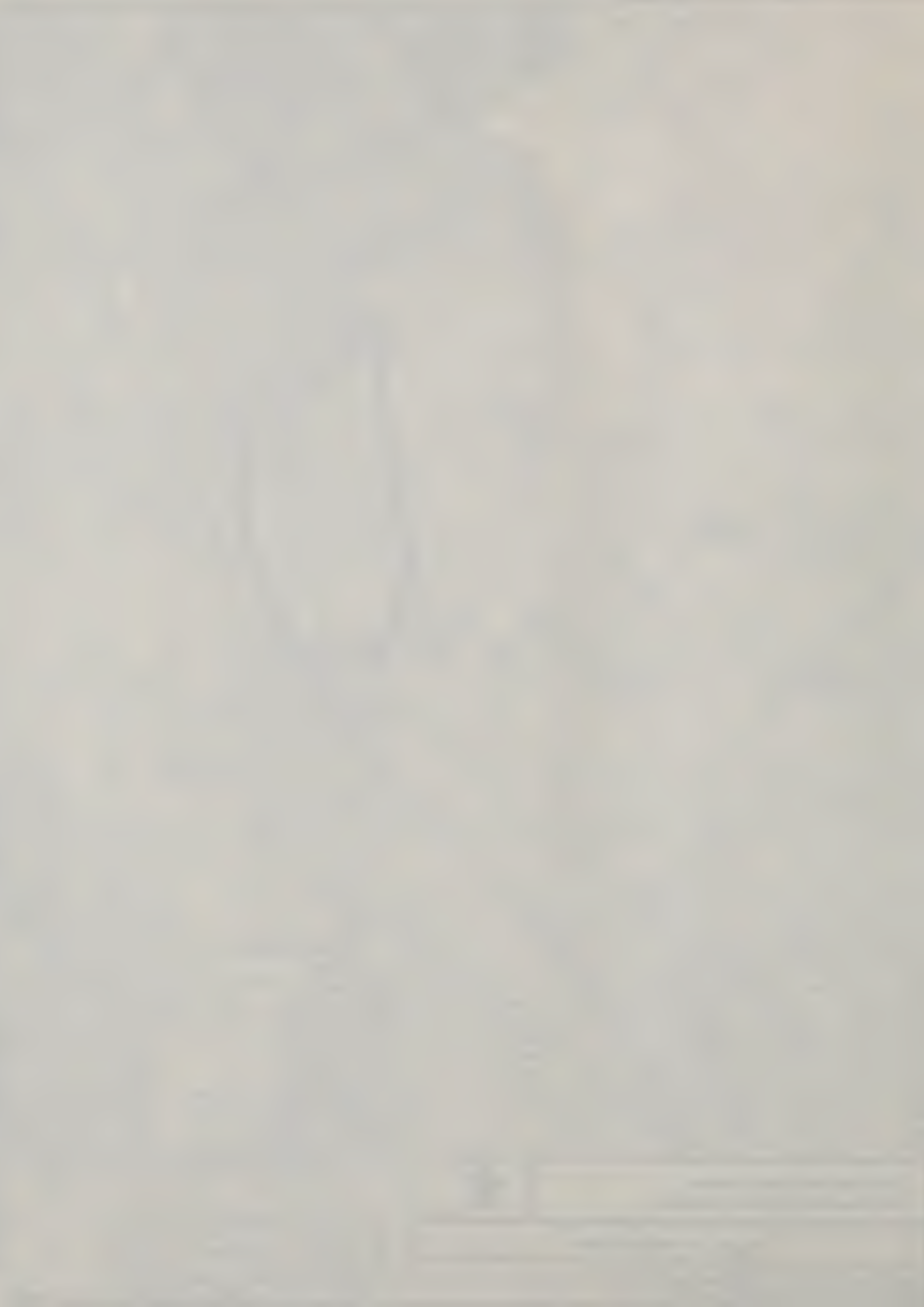
Proposed Massachusetts Professional Sports Complex

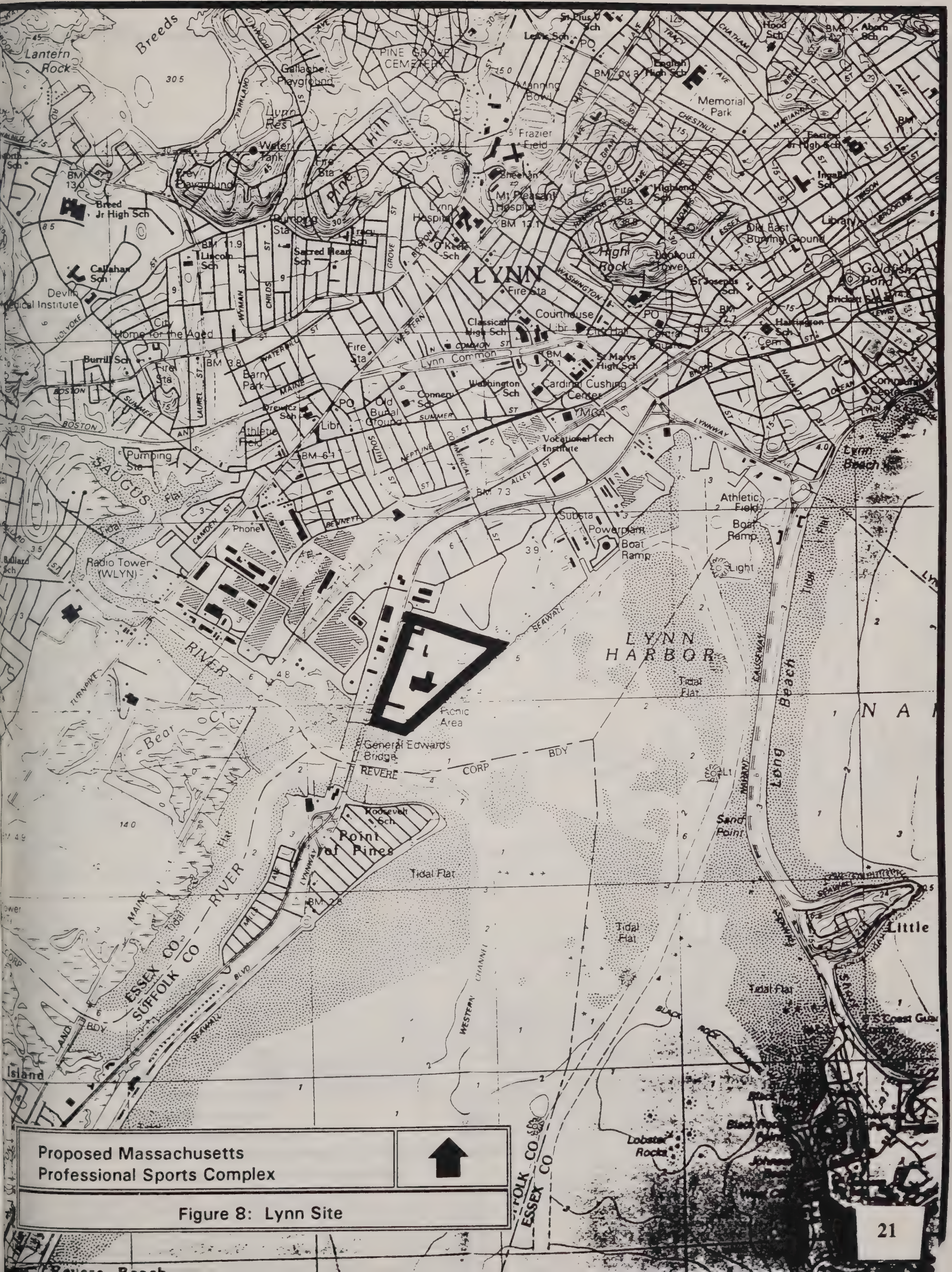
Figure 6: Framingham Site


H O L L A N D
HAMILTON
RESERVOIR
Boat Ramp
Badger 2
BUTTERWORTH ROAD
MASHAPAUG
VINTON ROAD
Brook
HAMPDEN CO
WORCESTER CO
Sandpit
Rest Area
BREAKNECK
MAY BROOK ROAD
Brook
UNION ROAD
WALES
Cem
BRONSON RD
HOLLAND
Mashapaug
INTERCHANGE 406
Browns
JEEP
TRAIL
Mashapaug Pond
NIPMUCK STATE FOREST
BH SP
Bk
BIGELOW HOLLOW STATE PARK
Wells Pond
U N I O N
NIPMUCK STATE FOREST
Picnic Area
BIGELOW HOLLOW STATE PARK
Bigelow Bk
NIPM
270
285
255
240
225
208.0
228.5
211.0
218.0
254.5
248.5
300
267.5
239.5
222.5
216

Proposed Massachusetts Professional Sports Complex

Figure 7: Holland Site




Breeds
Lantern Rock
Pine Grove Cemetery
Gallagher Playground
Manning Bowl
English High Sch
Memorial Park
Hood Sch
Aborn Sch
Lynn Res
Water Tank
Frazier Field
Fire Sta
Pine Hill
Breed Jr High Sch
Pumping Sta
Lynn Hospital
Mt Pleasant Hospital
Highland Sch
Ingalls Sch
Cobbet Jr High Sch
Lincoln Sch
Sacred Heart Sch
Tracy Sch
O'Keefe Sch
High Rock
Lookout Tower
Old East Burying Ground
Library
Callahan Sch
Devlin Medical Institute
LYNN
St Josephs Sch
Goldfish Pond
City Home for the Aged
Classical High Sch
Courthouse
Libr
City Hall
PO
Central Square
Harrington Sch
Cem
Burrill Sch
Fire Sta
Barry Park
Lynn Common
St Marys High Sch
Cardinal Cushing Center
Washington Sch
Connery Sch
Old Burial Ground
Drewicz Sch
Libr
YMCA
Community Center
Athletic Field
Pumping Sta
Vocational Tech Institute
Lynnway
Lynn Beach
SAUGUS
Flat
Tidal
Phone
Radio Tower (WLYN)
Substa
Powerplant
Boat Ramp
Athletic Field
Boat Ramp
Light
Seawall
LYNN HARBOR
Tidal Flat
RIVER
Bear Cr
Picnic Area
General Edwards Bridge
REVERE
CORP
BDY
Roosevelt Sch
Point of Pines
Tidal Flat
Causeway
Long Beach
Nahant
Sand Point
NA
ESSEX CO
SUFFOLK CO
RIVER
Tidal Flat
Tidal Flat
Tidal Flat
Western Channel
Black Rock Channel
Little
US Coast Guard Station
Lobster Rocks
Black Rock
Island
Revere Beach
SUFFOLK CO
ESSEX CO

Proposed Massachusetts
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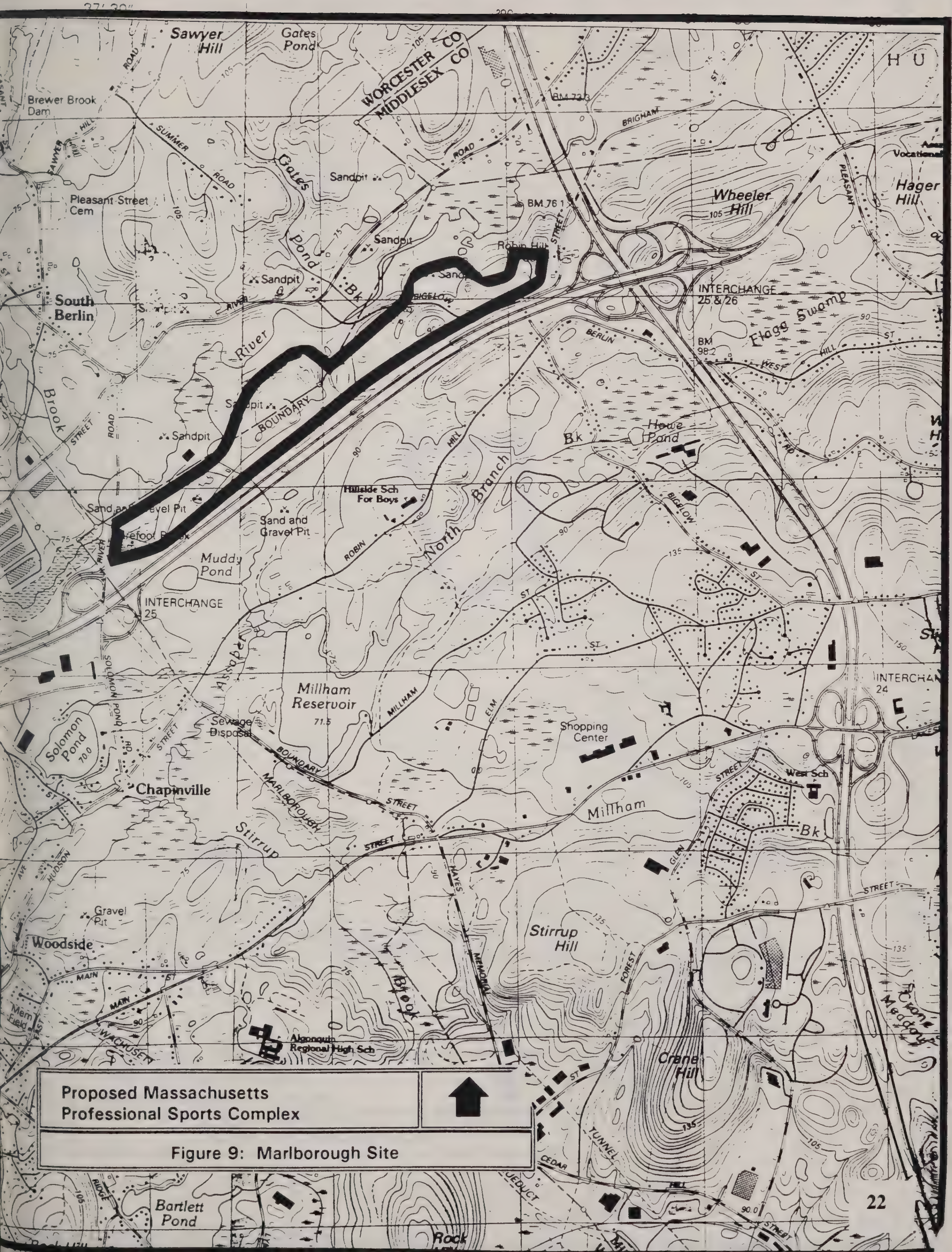
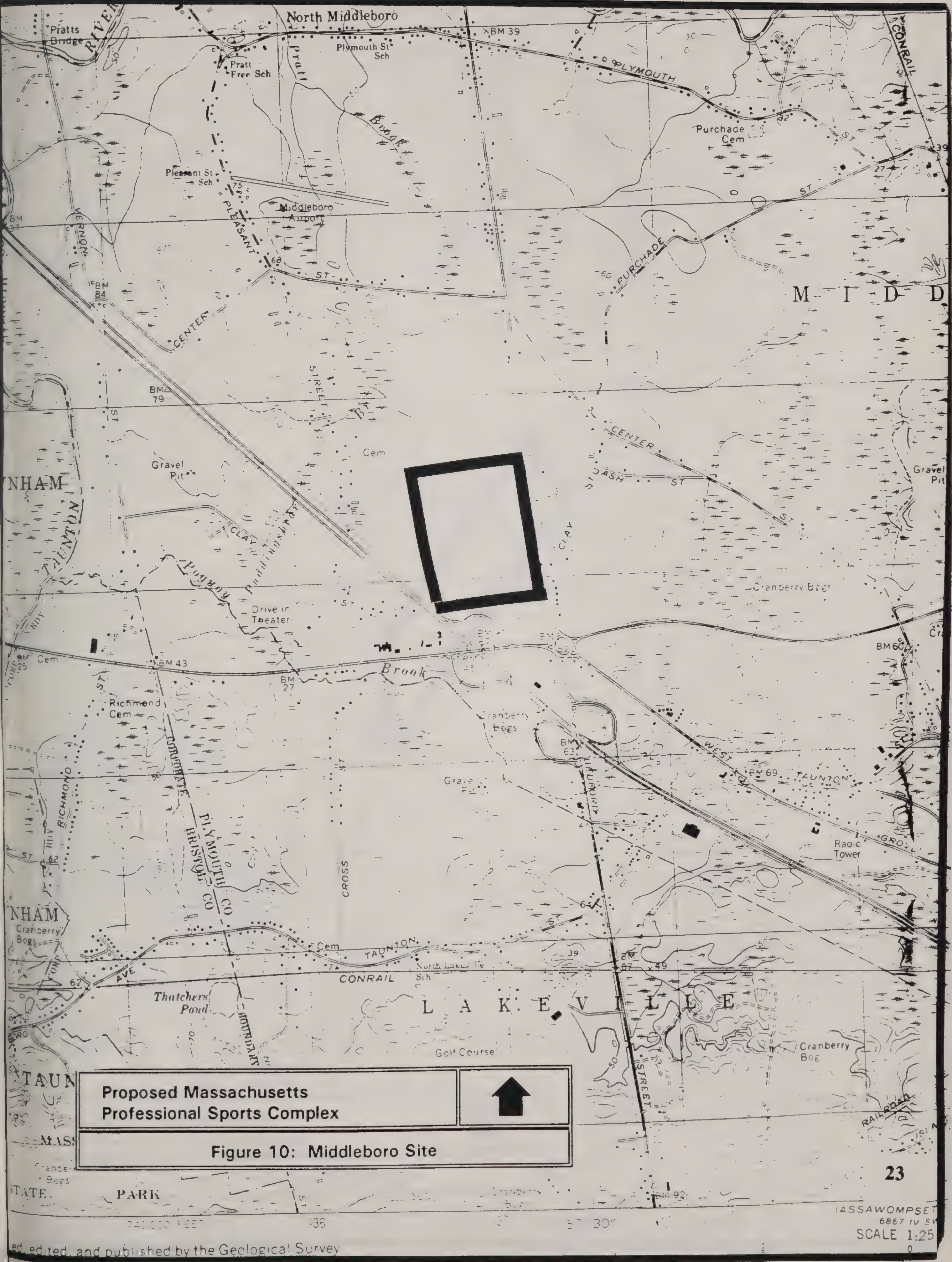
Figure 8: Lynn Site


Sawyer Hill
Gates Pond
WORCESTER CO
MIDDLESEX CO
Brewer Brook Dam
Pleasant Street Cem
South Berlin
Gates Pond Bk
Sandpit
Robin Hill
BRIGHAM
Wheeler Hill
Hager Hill
INTERCHANGE 25 & 26
Flagg Swamp
River
BOUNDARY
Brook
Sand and Gravel Pit
Hillside Sch For Boys
North Branch
Howe Pond
Muddy Pond
INTERCHANGE 25
Millham Reservoir
Sewage Disposal
Solomon Pond
Chapinville
Shopping Center
West Sch
Millham Bk
INTERCHANGE 24
Stirrup Hill
Gravel Pit
Woodside
Algonquin Regional High Sch
Crane Hill
Bartlett Pond
Rock

Proposed Massachusetts
Professional Sports Complex

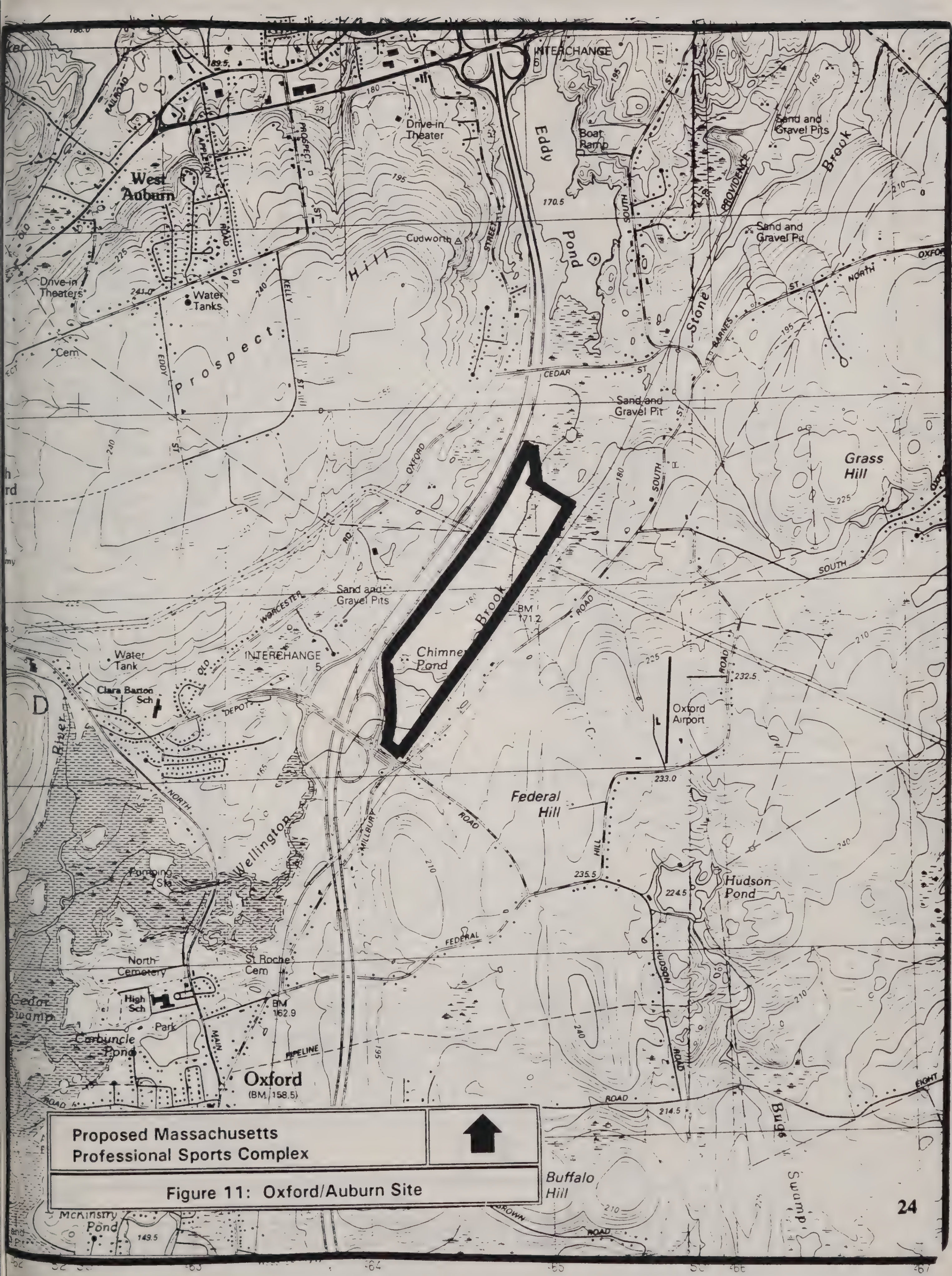
Figure 9: Marlborough Site


North Middleboro
Pratts Bridge
RIVER
Pratt Free Sch
Plymouth St Sch
BM 39
PLYMOUTH
Purchade Cem
Pratt Brook
Pleasant St Sch
PLEASANT
Middleboro Airport
VERNON
CENTER
ST
PURCHADE ST
M I D D
BM 84
BM 79
STREET
Cem
Gravel Pit
NHAM
TAUNTON
CLAY
Poquoy Brook
Drive in Theater
CENTER
ASH ST
CLAY ST
Cranberry Bogs
BM 43
BM 27
Brook
Richmond Cem
RICHMOND
PLYMOUTH CO
BRISTOL CO
CROSS ST
Cranberry Bogs
Gravel Pit
BEDFORD
WEST
BM 69
TAUNTON
Radio Tower
GROVE
BM 60
NHAM
Cranberry Bogs
Cem
TAUNTON
AVE
CONRAIL
North Lakeville Sch
Thatchers Pond
BOUNDARY
L A K E V I L L E
STREET
Golf Course
Cranberry Bog
RAILROAD
TAUN
MASS
STATE
PARK
CONRAIL
ed, edited, and published by the Geological Survey
ASSAWOMPSET
6867 IV SW
SCALE 1:25

Proposed Massachusetts Professional Sports Complex

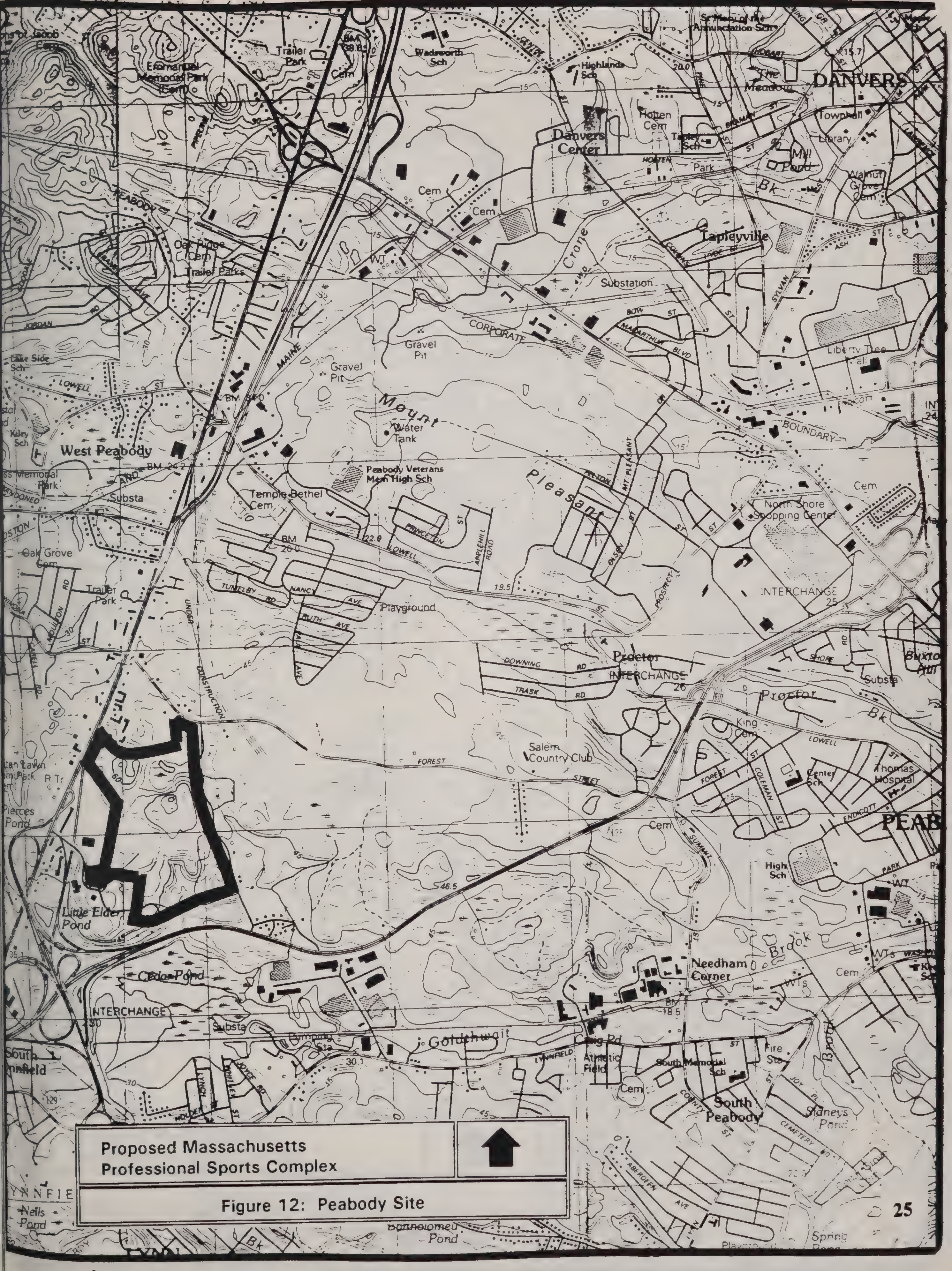
⬆

Figure 10: Middleboro Site


INTERCHANGE 6
West Auburn
RAILROAD
APPLETON
PROSPECT ST
Drive-in Theater
Eddy Pond
Boat Ramp
170.5
SOUTH ST
PROVIDENCE
Sand and Gravel Pits
Stone Brook
Sand and Gravel Pit
Cudworth
Hill
Prospect
Drive-in Theaters
241.0
Water Tanks
KELLY
EDDY ST
Cem
OXFORD
NORTH ST
BARNES
CEDAR ST
Sand and Gravel Pit
SOUTH ST
Grass Hill
OXFORD RD
SOUTH
Sand and Gravel Pits
WORCESTER
BM 171.2
Brook
Chimney Pond
ROAD
INTERCHANGE 5
Water Tank
OLD DEPOT
Clara Barton Sch
232.5
Oxford Airport
233.0
River
NORTH
Federal Hill
HILL
Wellington
MILLBURY
ROAD
Pumping Sta
235.5
224.5
Hudson Pond
FEDERAL
North Cemetery
St Roche Cem
HUDSON ROAD
High Sch
BM 162.9
Cedar Swamp
Park
MAIN
Carbuncle Pond
PIPELINE
Oxford
(BM 158.5)
ROAD
214.5
Buffalo Hill
Swamp
McKinstry Pond
149.5
BROWN ROAD

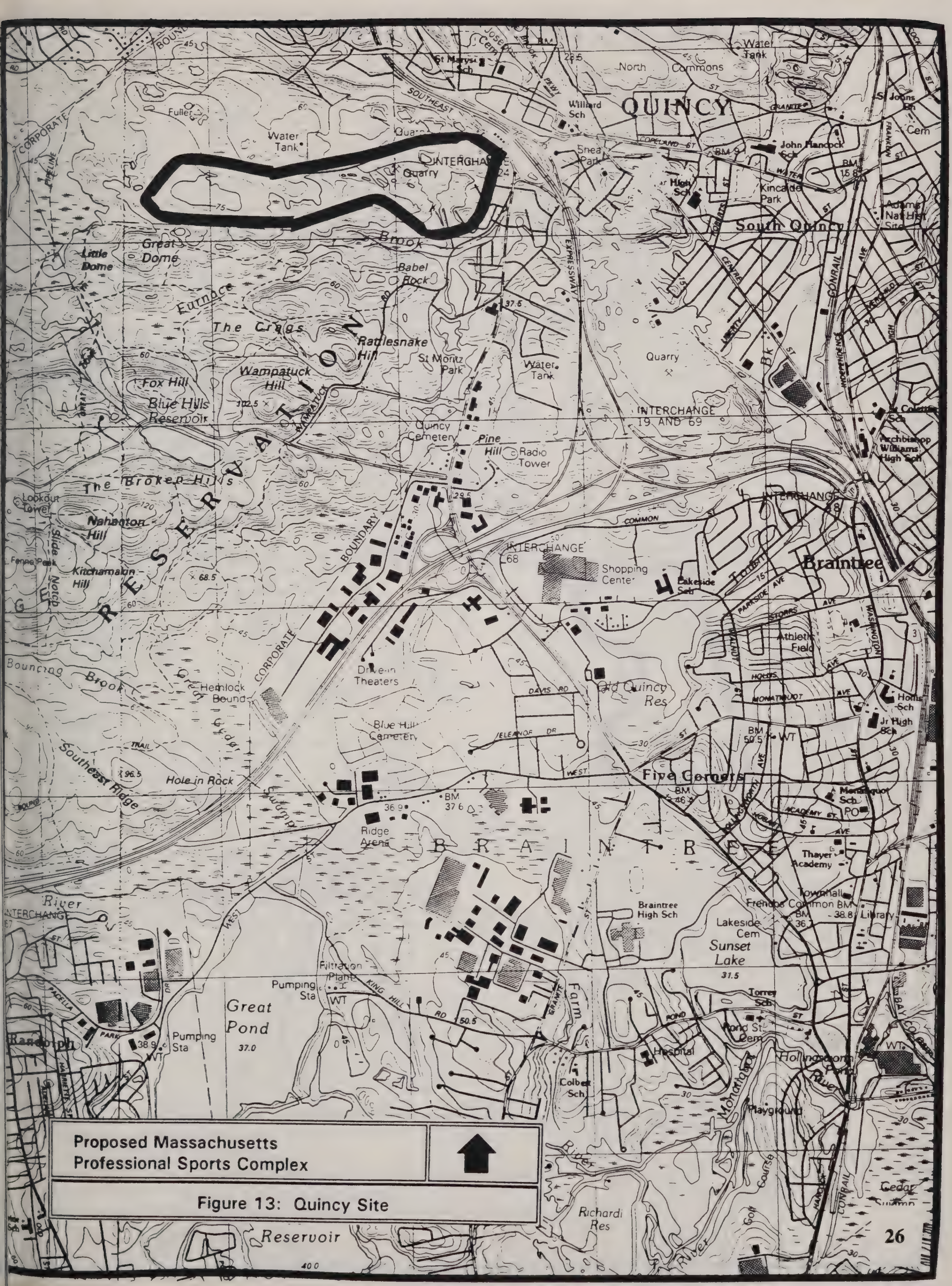
Proposed Massachusetts
Professional Sports Complex

Figure 11: Oxford/Auburn Site


DANVERS
Danvers Center
Tapleyville
West Peabody
Peabody Veterans Mem High Sch
Mount Pleasant
Proctor
INTERCHANGE 26
INTERCHANGE 25
Salem Country Club
Little Elder Pond
Cedar Pond
Needham Corner
South Peabody
Goldthwait
Liberty Tree Mall
North Shore Shopping Center
Thomas Hospital
PEAB

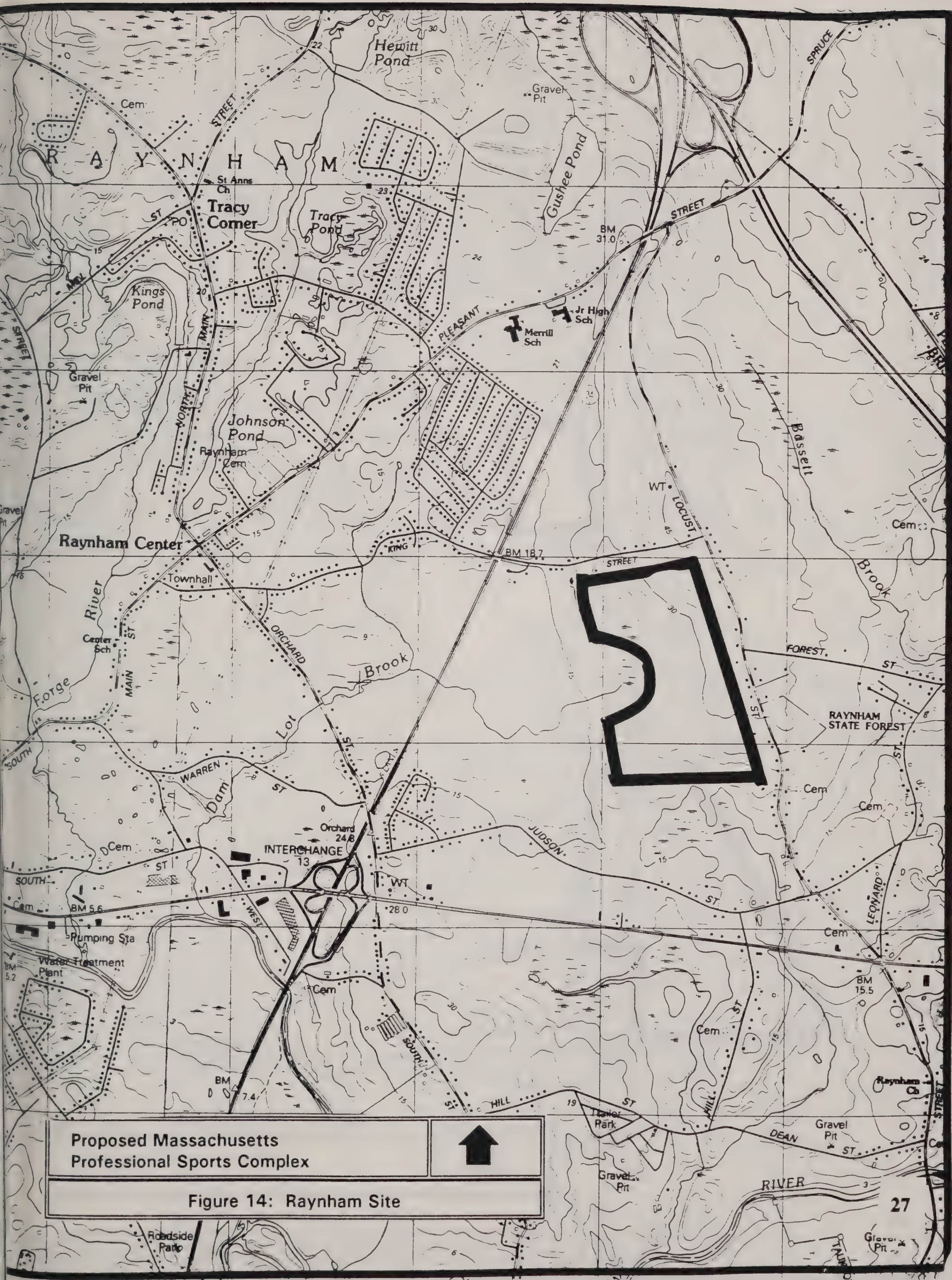
Proposed Massachusetts
Professional Sports Complex

Figure 12: Peabody Site


QUINCY
North Commons
Water Tank
St Marys Sch
Willard Sch
Snea Park
John Hancock Sch
Kincaide Park
South Quincy
Adams Nat Hist Site
St Johns
Cem
Fuller
Water Tank
Quarry
INTERCHANGE 24
Brook
SOUTHEAST
EXPRESSWAY
Little Dome
Great Dome
Babel Rock
Furnace
The Crags
Rattlesnake Hill
St Moritz Park
Water Tank
Quarry
Wampatuck Hill
Fox Hill
Blue Hills Reservoir
RESERVATION
INTERCHANGE 19 AND 69
Quincy Cemetery
Pine Hill
Radio Tower
St Coletta Sch
Archbishop Williams High Sch
The Broken Hills
Lookout Tower
Nahanton Hill
Kitchamakin Hill
Fenno Peak
INTERCHANGE 68
Shopping Center
Lakeside Sch
Braintree
Athletic Field
CORPORATE BOUNDARY
Bouncing Brook
Hemlock Bound
Drive-in Theaters
Old Quincy Res
Blue Hill Cemetery
Hollis Sch
Jr High Sch
Southeast Ridge
Hole in Rock
Five Corners
Monatiquot Sch
PO
Ridge Arena
BRAINTREE
Thayer Academy
Town hall
Frenchs Common
Library
River
INTERCHANGE 67
Braintree High Sch
Lakeside Cem
Sunset Lake 31.5
Filtration Plant
Pumping Sta
Great Pond 37.0
King Hill Rd
Torrey Sch
Pond St Cem
Hollingsworth Park
Randolph
Pumping Sta
WT
Hospital
Colbert Sch
Monatiquot River
Playground
CONRAIL
Cedar Swamp
Richardi Res
Reservoir
Golf Course

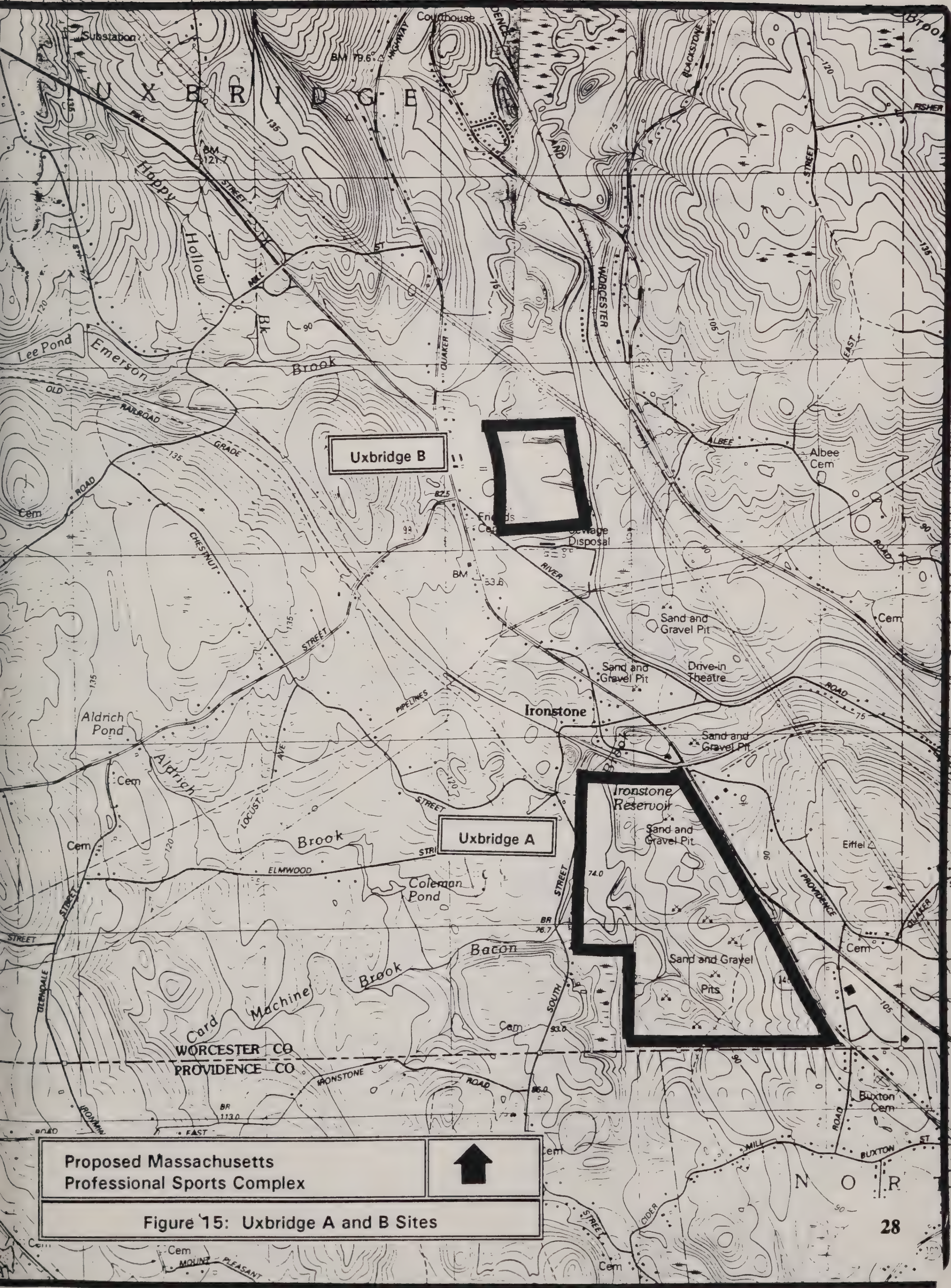
Proposed Massachusetts Professional Sports Complex

Figure 13: Quincy Site


RAYNHAM
Hewitt Pond
Gravel Pit
Cem
STREET
St Anns Ch
Tracy Corner
PO
ST
MILL
Tracy Pond
Gushee Pond
BM 31.0
STREET
SPRUCE
Kings Pond
STREET
Gravel Pit
PLEASANT
Merrill Sch
Jr High Sch
NORTH
MAIN
Johnson Pond
Raynham Cem
Bassett
WT
LOCUST
Cem
Raynham Center
KING
BM 18.7
STREET
Brook
Townhall
River
ORCHARD
Brook
FOREST
ST
Center Sch
MAIN ST
Forge
Lot
ST
RAYNHAM STATE FOREST
SOUTH
WARREN
ST
Dam
Cem
Cem
Orchard 24.8
INTERCHANGE 13
JUDSON
Cem
SOUTH
ST
WT
ST
LEONARD
Cem
BM 5.6
WEST
28.0
Pumping Sta
Cem
Water Treatment Plant
BM 15.5
BM 5.2
Cem
Cem
SOUTH
ST
HILL
ST
BM 7.4
HILL
ST
Trailer Park
Raynham Ch
Gravel Pit
DEAN
ST
STREET
Gravel Pit
RIVER
Roadside Park
Gravel Pit

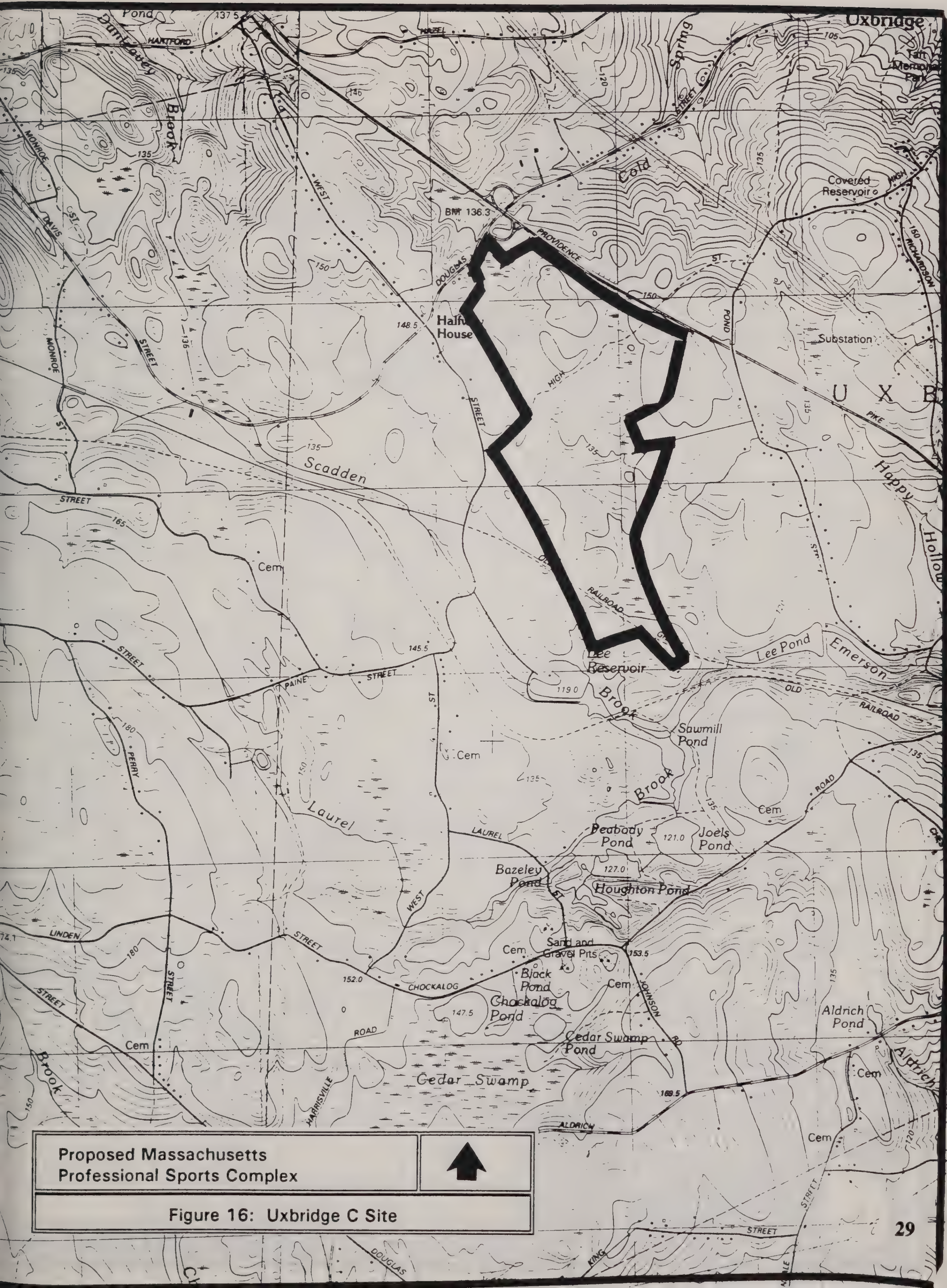
Proposed Massachusetts Professional Sports Complex

Figure 14: Raynham Site


Uxbridge B
Uxbridge A
UXBRIDGE
Ironstone
Ironstone Reservoir
Sand and Gravel Pit
Sand and Gravel Pits
Drive-in Theatre
Sewage Disposal
Friends Cem
Albee Cem
Courthouse
Substation
Lee Pond
Emerson Brook
Happy Hollow Bk
Aldrich Pond
Aldrich Brook
Coleman Pond
Bacon Brook
Card Machine Brook
Buxton Cem
WORCESTER CO
PROVIDENCE CO
Eiffel
N O R

Proposed Massachusetts Professional Sports Complex

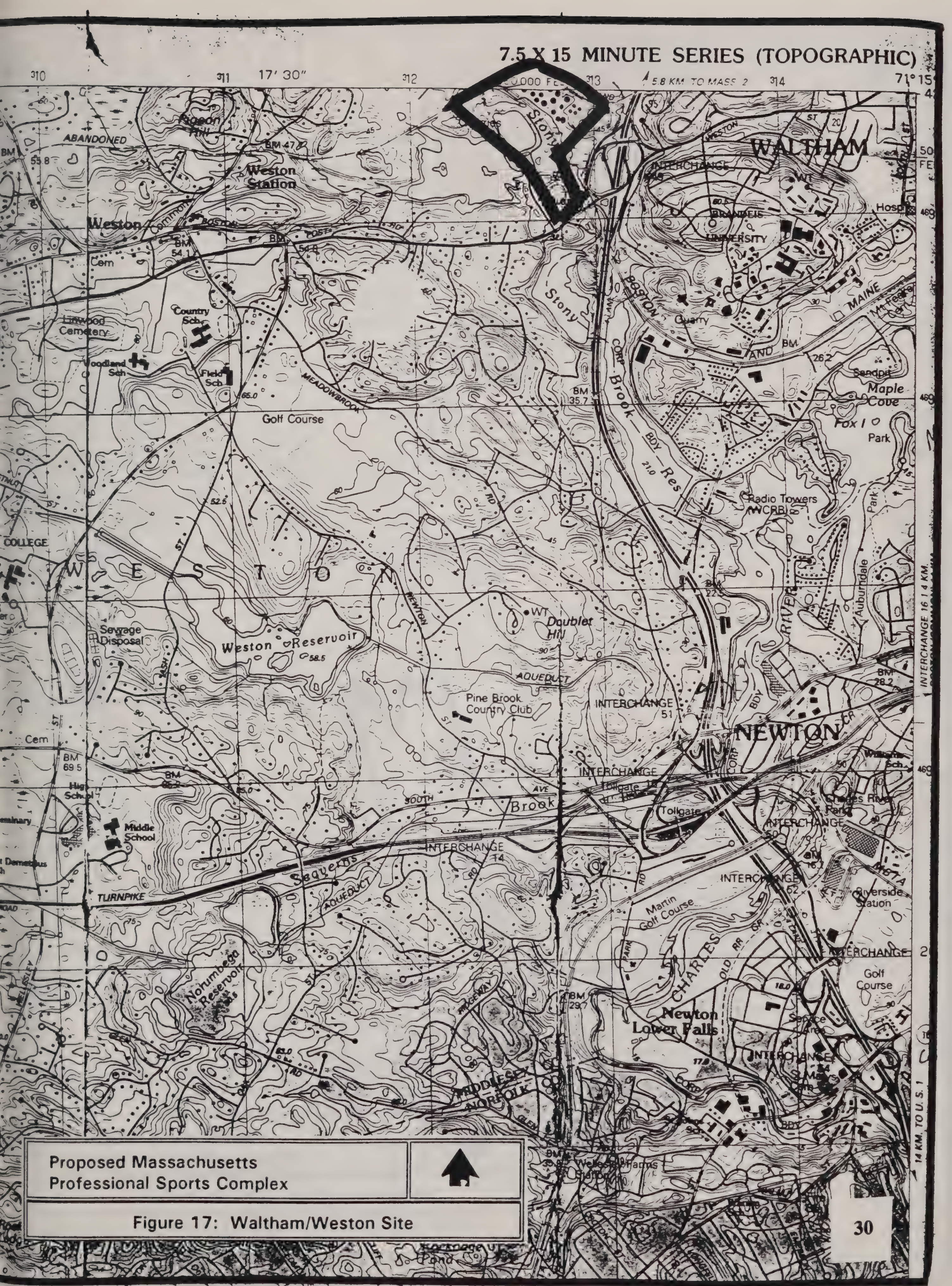
Figure 15: Uxbridge A and B Sites


Uxbridge
Taft Memorial Park
Pond
Dunlavey Brook
Hartford
Hazel
Spring
Cold
Street
Monroe
Davis St
West
Brook
Covered Reservoir
High
Richardson
BM 136.3
Providence
Douglas
Halfway House
148.5
Pond
St
Pike
Substation
U X B
Happy
Hollow
High
Street
Scadden
Street
Monroe St
Cem
Old
Railroad
Lee Reservoir
Lee Pond
Emerson
Brook
119.0
Old
Railroad
145.5
Paine
Street
Street
Perry
Cem
Sawmill Pond
Brook
Road
Cem
Laurel
Laurel
Peabody Pond
121.0
Joels Pond
Bazeley Pond
127.0
Houghton Pond
West
Linden
Street
Street
Sand and Gravel Pits
153.5
Cem
152.0
Chockalog
Black Pond
Cem
Johnson
Chockalog Pond
147.5
Road
Cem
Cedar Swamp Pond
Rd
Aldrich Pond
Aldrich
Cem
Brook
Harrisville
Cedar Swamp
169.5
Aldrich
Cem
Street
Street
King
Douglas

Proposed Massachusetts
Professional Sports Complex

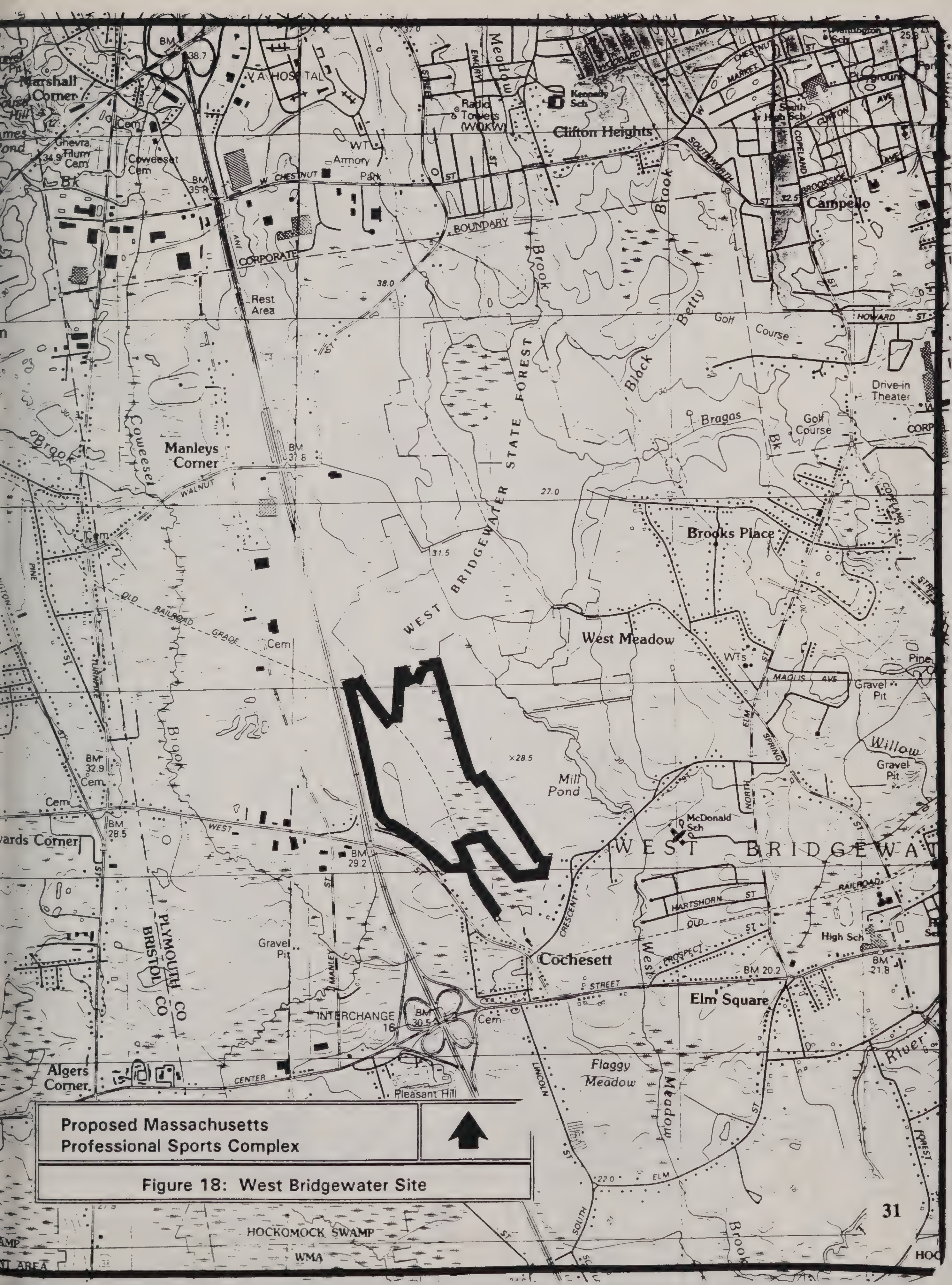
Figure 16: Uxbridge C Site

[illegible]


7.5 X 15 MINUTE SERIES (TOPOGRAPHIC)
17′ 30″
5.8 KM TO MASS 2
WALTHAM
Weston Station
Weston
Pigeon Hill
BRANDEIS UNIVERSITY
Stony Brook
Linwood Cemetery
Country Sch
Woodland Sch
Field Sch
Golf Course
MEADOWBROOK
BOSTON AND MAINE
Quarry
Maple Cove
Fox Park
Radio Towers (WCRB)
COLLEGE
W E S T O N
Sewage Disposal
Weston Reservoir
Doublet Hill
AQUEDUCT
Pine Brook Country Club
INTERCHANGE 51
NEWTON
Auburndale
High School
Middle School
Tollgate
INTERCHANGE 14
Charles River Park
Riverside Station
Martin Golf Course
CHARLES
Nahumbega Reservoir
Newton Lower Falls
MIDDLESEX
NORFOLK
Wellesley Farms
Rockdale Pond
TURNPIKE
INTERCHANGE 16 1.4 KM.
14 KM. TO U.S. 1

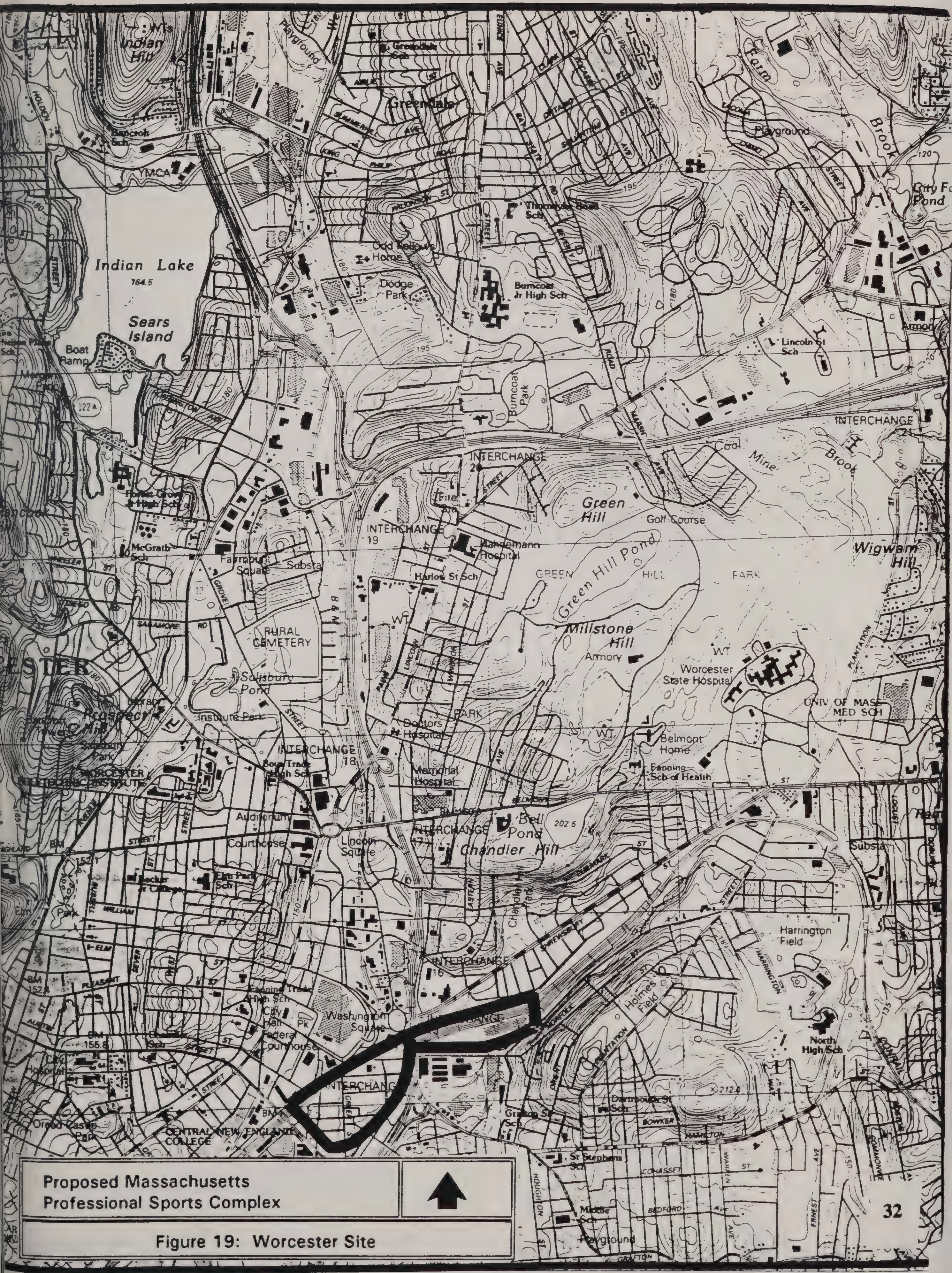
Proposed Massachusetts
Professional Sports Complex

Figure 17: Waltham/Weston Site


Marshall Corner
V.A. HOSPITAL
Meadow
Kennedy Sch
Radio Towers (WOKW)
Clifton Heights
South High Sch
Campello
Chevra Tilum Cem
Coweeset Cem
Armory Park
W CHESTNUT
BOUNDARY
CORPORATE
Rest Area
Brook
Black Betty
Golf Course
HOWARD ST
Drive-in Theater
Bragas
Bk
Golf Course
WEST BRIDGEWATER STATE FOREST
Manleys Corner
Coweeset
Brook
WALNUT
Cem
OLD RAILROAD GRADE
Cem
Brooks Place
West Meadow
WTs
MAGUS AVE
Gravel Pit
Willow
Gravel Pit
Mill Pond
McDonald Sch
WEST BRIDGEWAT
Edwards Corner
WEST
HARTSHORN ST
OLD RAILROAD
High Sch
PLYMOUTH CO
BRISTOL CO
Gravel Pit
Cochesett
PROSPECT
STREET
Elm Square
INTERCHANGE 16
Cem
Algers Corner
CENTER
Pleasant Hill
LINCOLN
Flaggy Meadow
Meadow
River
ELM
SOUTH
HOCKOMOCK SWAMP
WMA

Proposed Massachusetts Professional Sports Complex

Figure 18: West Bridgewater Site


Indian Lake
Sears Island
Greendale
Green Hill
Green Hill Pond
Millstone Hill
Worcester State Hospital
UNIV OF MASS MED SCH
Chandler Hill
Bell Pond
Washington Square
Lincoln Square
Rural Cemetery
Salisbury Pond
Prospect Hill
Worcester Polytechnic Institute
Central New England College
Harrington Field
Holmes Field
North High Sch
Wigwam Hill
Interchange 16
Interchange 17
Interchange 18
Interchange 19
Interchange 20
Interchange 21

Proposed Massachusetts
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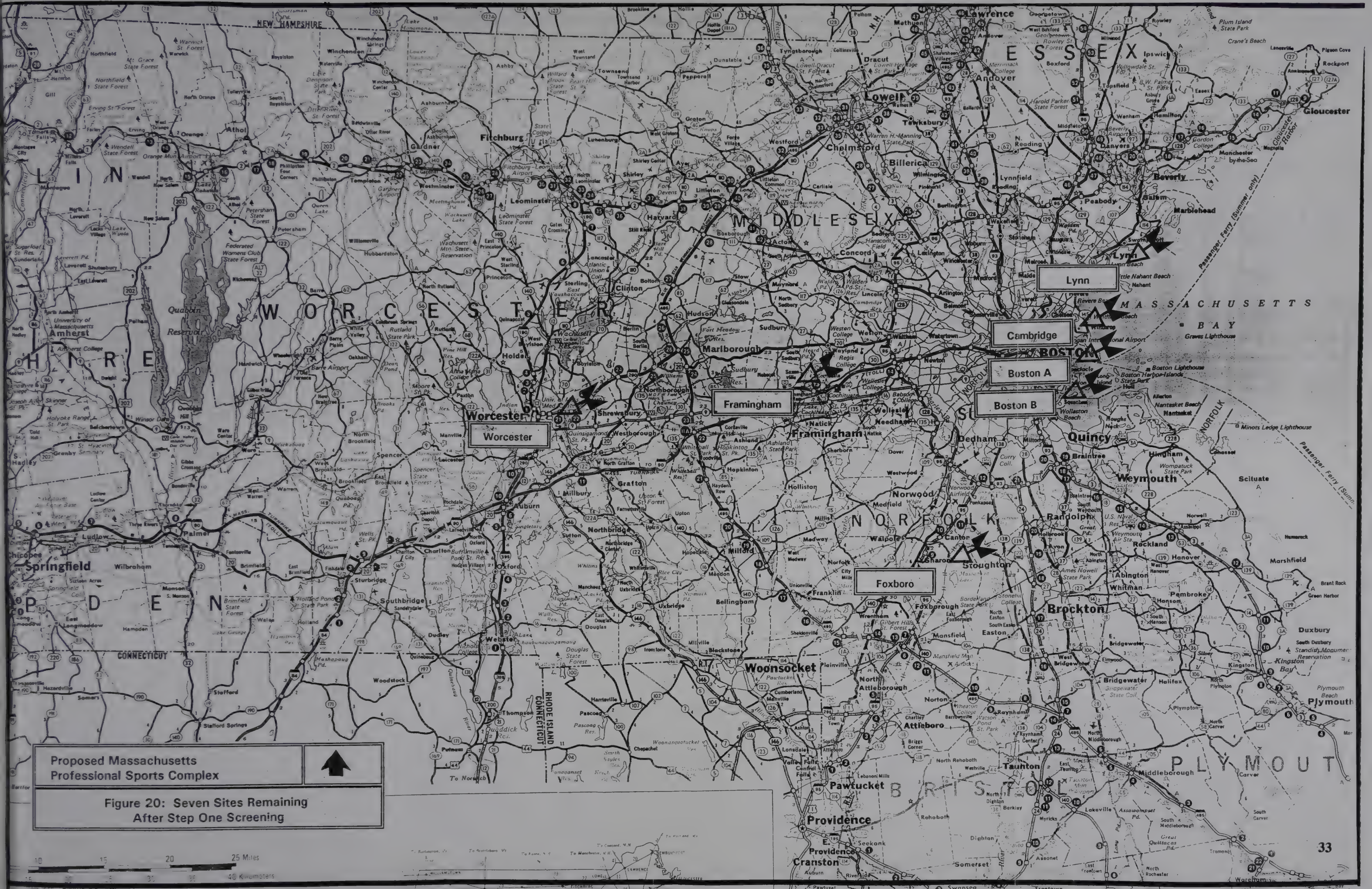
Figure 19: Worcester Site



Lynn
Cambridge
Boston A
Boston B
Framingham
Worcester
Foxboro
ESSEX
MIDDLESEX
WORCESTER
NORFOLK
BRISTOL
PLYMOUTH
MASSACHUSETTS BAY
Lowell
Lawrence
Fitchburg
Springfield
Brockton
Quincy
Providence
Woonsocket
Pawtucket
Gloucester
Plymouth
10 15 20 25 Miles
40 Kilometers

Proposed Massachusetts Professional Sports Complex

Figure 20: Seven Sites Remaining After Step One Screening

2. COST ESTIMATES

This section includes estimated hard and soft costs, including infrastructure, for developing the following scenarios: (1) an effectively functioning 65,000 to 75,000 seat stand alone stadium, open air and domed; (2) 1,100,000 square feet of convention center and ancillary support facilities; and (3) a "megaplex", combining a 65,000 to 75,000 seat domed stadium with 900,000 square feet of convention center facilities. The infrastructure costs are broad order of magnitude estimates to establish a common basis for evaluation and comparison of the viability of each site. In cases where the improvement is already planned and funding projected by others, such as relocation of Lechmere Station in Cambridge or reconstruction of Route 129 in Lynn, the cost is not included in the cost of developing the site.

"Hard" costs are construction costs and "soft" costs are the cost of environmental analysis, design, engineering, environmental permitting, site acquisition, relocation, furnishings and equipment.

2.1 Stadium

The cost of constructing a 65,000 to 75,000 seat stand alone, open air stadium would be approximately $135 million. The soft costs associated with that construction are $33.75 million.

The estimate presented by owners of Foxboro stadium to expand and update the existing facility is approximately $50 million. These costs do not include land acquisition or the purchase of the existing facility, which would likely be required if the Commonwealth were to fund the improvements to the stadium. In addition, these costs have not been verified through the cost estimating process of this study. The soft costs associated with renovating the open air stadium are estimated to be approximately $12.5 million.

Tables 3 through 8 following itemize the estimated hard and soft infrastructure costs at the six sites being analyzed for potential stadium development. The infrastructure cost estimates and total soft costs at each site are listed below:

SITE	INFRASTRUCTURE COST ESTIMATE	TOTAL SOFT COSTS
Boston - State Hospital	Not feasible	--
Worcester	$169.3 million	$44.9 million
Cambridge: Option 1	$165.1 million	$49.8 million
Cambridge: Option 3	$141.1 million	$47.5 million
Boston - South Bay	$134.4 million	$43.7 million
Cambridge: Option 2	$133.1 million	$46.7 million
Lynn	$ 84.2 million	$37.8 million
Foxboro: Option 1	$ 18.7 million	$14.4 million
Foxboro: Option 2	$ 16.9 million	$14.2 million

Combining the stadium, infrastructure and soft costs listed above, the estimated cost of developing an open air stadium on each site is listed below.

SITE	ESTIMATED COST
Boston - State Hospital	--
Cambridge: Option 1	$349.9 million
Worcester	$349.2 million
Cambridge: Option 3	$323.6 million
Cambridge: Option 2	$314.8 million
Boston - South Bay	$313.1 million
Lynn	$257.0 million

The estimated cost of a renovated stadium at Foxboro, excluding land and stadium acquisition costs, is listed below:

Foxboro: Option 1	$83.1 million
Foxboro: Option 2	$81.1 million

The cost of constructing a 65,000 to 75,000 seat stand alone, domed stadium would be approximately $290.5 million. The soft costs associated with that construction are $72.625 million. Therefore, the incremental cost of a domed stadium over an open air stadium is $194.4 million.

Combining the domed stadium, infrastructure and soft cost estimates listed above, the estimated cost of developing a domed stadium on each site is listed below. Estimates were not developed for a domed stadium in Foxboro.

SITE	ESTIMATED COST
Boston - State Hospital	--
Cambridge: Option 1	$544.3 million
Worcester	$543.6 million
Cambridge: Option 3	$518.0 million
Cambridge: Option 2	$509.2 million
Boston - South Bay	$507.5 million
Lynn	$451.4 million

TABLE 3: BOSTON - SOUTH BAY

• Road Access	
▸ Ramp from Massachusetts Avenue/South Boston Haul Road network into site	$2.5 million
• Transit Access	
▸ Commuter rail stations: Dorchester Branch/Old Colony Line	$3 million
• Parking	
▸ Surface parking for 5,000 vehicles	$15 million
▸ Structured parking for 3,000 cars	$45 million
• Pedestrian connections	
▸ Across I-93	
▸ Across Haul Road	
▸ To West Fourth Street	
▸ Across RR tracks	
	$5 million
• Site acquisition, relocation	
▸ Widett Circle produce wholesalers	$23 million
▸ City of Boston garage, tow lot	$14 million
▸ Relocate AMTRAK loop	$2.5 million
▸ Move train washer	$5 million
• Geotechnical	
▸ Drive piles with caps to 140'	$8.4 million
▸ Environmental testing, cleanup	$8 million
▸ Consideration of Roxbury Canal, Dorchester Brook culverts	$3 million
Infrastructure Costs:	**$ 134.4 million**
• Environmental analysis, design, engineering, environmental permitting. These costs are included in the estimate of project soft cost.	$ 9.9 million

---

TABLE 4: BOSTON - STATE HOSPITAL

As noted in the Site Descriptions portion of the text, the cost of developing access to the Interstate highway network, such as creating limited access roads along the path of Gallivan Boulevard to the Southeast Expressway or south along Blue Hill Avenue through Milton to Route 128, would be very high, and beyond the scope of this study. The residential and commercial relocation which would be required is beyond levels acceptable in current day Boston. Developing access to the site to function as a stand alone stadium (or a megaplex) on a level comparable to the other sites being analyzed would not be feasible. See Section 3.2.2, "Rating and Numerical Ranking of Stadium Sites: Matrix" for further discussion.

- Road Access
    - Cost of developing access to interstates (Southeast Expressway)

Beyond feasibility

- Transit Access
    - Develop commuter rail stations:
      Dorchester Branch
      Shore Line
    - Shuttle from Forest Hills Station on Orange Line

- Parking
    - Surface parking for 15,000 cars

- Site acquisition, relocation
    - Acquire site from Commonwealth
    - Demolition of State Hospital Buildings

- Geotechnical
    - Probably 30' to base
    - Environmental testing, cleanup of State Hospital use

Infrastructure Costs: Not feasible

TABLE 5: CAMBRIDGE

• Road Access	
▸ Option 1: Cost of access ramps to/from I-93 to site and parking garage	$42 million
▸ Option 2: Cost of access from Rutherford Avenue to site and parking garage	$10 million
▸ Option 3: Cost of construction of another Gilmore Bridge	$18 million
• Transit Access	
▸ Relocating Lechmere Station (planned by MBTA)	0
▸ Construction of new commuter rail station	$4 million
▸ Consolidation of railroad tracks	$2.5 million
• Air rights	
▸ Development for garage	$12 million
• Parking	
▸ Surface parking for 3,000 cars	$9 million
▸ Structured parking for 5,000	$75 million
• Pedestrian connections	
▸ From Community College Station	$3.5 million
▸ Across RR tracks	$2 million
• Site acquisition, relocation	
▸ Purchase former railroad yard	$3 million
▸ Purchase, demolish Maple Leaf Office Building, Lotus warehouse	$2.6 million
• Geotechnical	
▸ Drive piles with caps to 70'	$4.5 million
▸ Environmental testing, cleanup	$5 million
Infrastructure Costs:	**Option 1 - $165.1 million** **Option 2 - $133.1 million** **Option 3 - $141.1 million**
• Environmental analysis, design, engineering, environmental permitting. These costs are included in the estimates of project soft cost.	Option 1 - $ 16.1 million Option 2 - $ 12.9 million Option 3 - $ 13.7 million

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TABLE 6: FOXBORO

• Road Access	
▸ Widen 4 miles of Route 1 from four to six lanes	$7.7 million
• Transit Access	
▸ Construct permanent station at stadium	$2.5 million
• Parking	
▸ Construction of additional parking	$5.5 million
• Pedestrian connections	
▸ Option 1: Relocate 3/4 mile of Route 1 to north around parking lots to consolidate parking	$3 million
▸ Option 2: Pedestrian connection across Route 1 from parking	$1.2 million

Infrastructure Costs: Option 1 - $18.7 million
Option 2 - $16.9 million

- Environmental analysis, design, engineering, environmental permitting. These costs are included in estimates of project soft costs.

Option 1 - $ 1.9 million
Option 2 - $ 1.7 million

TABLE 7: LYNN

• Road Access	
▸ Access through GE property to Route 107	$.2 million
▸ Upgrade of Route 129 (already planned)	0
• Transit Access	
▸ Construction of permanent station at GE Riverworks	$1.5 million
• Parking	
▸ Surface parking for 5,000 cars	$15 million
▸ Cost of leasing spaces from GE, other private sources	$3 million
• Pedestrian connections	
▸ Pedestrian bridge over Route 1A	$1.5 million
• Site acquisition, relocation	
▸ Eminent domain taking of multiple private properties	$41.6 million
▸ Relocation of commercial operations	$10.4 million
▸ Demolition of buildings	$4 million
• Geotechnical	
▸ Filled shorefront and capped landfill; drive piles with caps to 80-130 feet	$4 million
▸ Environmental testing, cleanup; part of site is capped landfill	$3 million
Infrastructure Costs:	**$84.2 million**
• Environmental analysis, design, engineering, environmental permitting. These costs are included in the estimate of project soft costs.	$4.0 million

TABLE 8: WORCESTER

• Road Access	
▸ Reconstruct ramps from I-290 as slip ramps	$7 million
▸ Local street improvements	$3 million
• Transit Access	
▸ Reinstitution of commuter rail service (planned)	0
• Parking	
▸ Structured parking for 5,000 cars	$65 million
▸ Surface parking for 3,000 cars	$9 million
• Pedestrian connections	
▸ Under I-290	$1 million
▸ To downtown	$3 million
• Site acquisition, relocation	
▸ Multiple private owners	$50 million
▸ Relocation of commercial/industrial uses	$12 million
▸ Demolition of buildings	$8 million
▸ Taking of Conrail property to make site work	$3 million
• Geotechnical	
▸ Pile foundations	$5.3 million
▸ Environmental testing, cleanup	$3 million
Infrastructure Costs:	**$169.3 million**
• Environmental analysis, design, engineering, environmental permitting. These costs are included in the estimate of project soft costs.	$11.1 million

2.2 Convention Center

The cost of constructing 1,100,000 square feet of exhibition space and ancillary supporting space for a convention center would be approximately $192.5 million. The soft cost associated with that construction would be $48.15 million.

Tables 9 and 10 following itemize the estimated cost for infrastructure at the two sites being analyzed for convention center potential. The infrastructure cost estimates and total soft cost estimates are listed below:

SITE	INFRASTRUCTURE COST ESTIMATE	TOTAL SOFT COSTS
Cambridge: Option 1	$163.6 million	$64.0 million
Boston - South Bay	$131.6 million	$57.8 million

Combining the convention center, infrastructure and soft costs listed above, the estimated cost of developing a convention center on each site is listed below.

SITE	ESTIMATED COST
Cambridge: Option 1	$420.1 million
Boston - South Bay	$381.9 million

TABLE 9: BOSTON - SOUTH BAY

● Road Access	
▸ Ramp from Massachusetts Avenue/South Boston Haul Road network into site	$2.5 million
● Transit Access	
▸ Commuter rail stations: Dorchester Branch/Old Colony Line	$3 million
● Parking	
▸ Surface parking for 5,000 vehicles	$15 million
▸ Structured parking for 3,000 cars	$45 million
● Pedestrian connections	
▸ Across I-93	
▸ Across Haul Road	
▸ To West Fourth Street	
▸ Across RR tracks	
	$5 million
● Site acquisition, relocation	
▸ Widett Circle produce wholesalers	$23 million
▸ City of Boston garage, tow lot	$14 million
▸ Relocate AMTRAK loop	$2.5 million
▸ Move train washer	$5 million
● Geotechnical	
▸ Drive piles with caps to 140'	$5.6 million
▸ Environmental testing, cleanup	$8 million
▸ Consideration of Roxbury Canal, Dorchester Brook culverts	$3 million
Infrastructure Costs:	**$ 131.6 million**
● Environmental analysis, design, engineering, environmental permitting. These costs are incuded in the estimates of project soft cost.	$ 9.6 million

TABLE 10: CAMBRIDGE

• Road Access	
▸ Option 1: Cost of access ramps to/from I-93 to site and parking garage	$42 million
▸ Option 2: Cost of access from Rutherford Avenue to site and parking garage	$10 million
▸ Option 3: Cost of construction of another Gilmore Bridge	$18 million
• Transit Access	
▸ Relocating Lechmere Station (planned by MBTA)	0
▸ Construction of new commuter rail station	$4 million
▸ Consolidation of railroad tracks	$2.5 million
• Air rights	
▸ Development for garage	$12 million
• Parking	
▸ Surface parking for 3,000 cars	$9 million
▸ Structured parking for 5,000	$75 million
• Pedestrian connections	
▸ From Community College Station	$3.5 million
▸ Across RR tracks	$2 million
• Site acquisition, relocation	
▸ Purchase former railroad yard	$3 million
▸ Purchase, demolish Maple Leaf Office Building, Lotus warehouse	$2.6 million
• Geotechnical	
▸ Drive piles with caps to 70'	$3 million
▸ Environmental testing, cleanup	$5 million
Infrastructure Costs:	**Option 1 - $163.6 million**
• Environmental analysis, design, engineering, environmental permitting. These costs are included in the estimates of project soft costs.	Option 1 - $ 15.9 million

2.3 Megaplex

The cost of constructing a megaplex consisting of a 75,000 seat domed stadium with 900,000 square feet of connected exhibition space and ancillary supporting facilities would be approximately $435 million. The soft costs associated with that construction would be approximately $108.8 million.

Tables 11 and 12 following itemize the estimated infrastructure costs at the two sites being analyzed for megaplex potential. The infrastructure cost estimates and total soft cost are listed below:

SITE	INFRASTRUCTURE COST ESTIMATE	TOTAL SOFT COSTS
Cambridge: Option 1	$168.1 million	$125.2 million
Boston - South Bay	$140.0 million	$119.3 million

Combining the megaplex, infrastructure and soft costs listed above, the estimated cost of developing a megaplex on each site is listed below.

SITE	ESTIMATED COST
Cambridge: Option 1	$728.3 million
Boston - South Bay	$694.3 million

Further cost efficiencies in development and construction could potentially be achieved in combining a stadium and convention center into a megaplex. Estimating the efficiencies and savings would require more detailed cost estimating beyond the order of magnitude cost estimates developed for this study.

TABLE 11: BOSTON - SOUTH BAY

● Road Access	
▸ Ramp from Massachusetts Avenue/South Boston Haul Road network into site	$2.5 million
● Transit Access	
▸ Commuter rail stations: Dorchester Branch/Old Colony Line	$3 million
● Parking	
▸ Surface parking for 5,000 vehicles	$15 million
▸ Structured parking for 3,000 cars	$45 million
● Pedestrian connections	
▸ Across I-93	
▸ Across Haul Road	
▸ To West Fourth Street	
▸ Across RR tracks	
	$5 million
● Site acquisition, relocation	
▸ Widett Circle produce wholesalers	$23 million
▸ City of Boston garage, tow lot	$14 million
▸ Relocate AMTRAK loop	$2.5 million
▸ Move train washer	$5 million
● Geotechnical	
▸ Drive piles with caps to 140'	$14 million
▸ Environmental testing, cleanup	$8 million
▸ Consideration of Roxbury Canal, Dorchester Brook culverts	$3 million
Infrastructure Costs:	**$140.0 million**
● Environmental analysis, design, engineering, environmental permitting. These costs are included in the estimates of project soft costs.	$10.5 million

TABLE 12: CAMBRIDGE

• Road Access	
▸ Option 1: Cost of access ramps to/from I-93 to site and parking garage	$42 million
▸ Option 2: Cost of access from Rutherford Avenue to site and parking garage	$10 million
▸ Option 3: Cost of construction of another Gilmore Bridge	$18 million
• Transit Access	
▸ Relocating Lechmere Station (planned by MBTA)	0
▸ Construction of new commuter rail station	$4 million
▸ Consolidation of railroad tracks	$2.5 million
• Air rights	
▸ Development for garage	$12 million
• Parking	
▸ Surface parking for 3,000 cars	$9 million
▸ Structured parking for 5,000	$75 million
• Pedestrian connections	
▸ From Community College Station	$3.5 million
▸ Across RR tracks	$2 million
• Site acquisition, relocation	
▸ Purchase former railroad yard	$3 million
▸ Purchase, demolish Maple Leaf Office Building, Lotus warehouse	$2.6 million
• Geotechnical	
▸ Drive piles with caps to 70'	$7.5 million
▸ Environmental testing, cleanup	$5 million
Infrastructure Costs:	**Option 1 - $168.1 million**

- Environmental analysis, design and engineering, environmental permitting. These costs are included in the estimates of project soft costs.

Option 1 - $ 16.4 million

3. PHASE TWO: NUMERICAL RANKINGS AND CONCEPT PLANS

3.1 Site Descriptions

A. BOSTON - SOUTH BAY

The "South Bay Gateway" is an approximately 42 acre site located in the South Bay section of South Boston. The site is bounded on the west and south by Interstate Route I-93/Route 3 (Central Artery/Southeast Expressway), on the east by the Massachusetts Bay Transportation Authority (MBTA) Dorchester Branch (also referred to as the Midland and Fairmount) railroad tracks and on the north by the West Fourth Street Bridge.

The site is located near the junction of Route I-90 (Massachusetts Turnpike) and Route I-93. Route I-93 provides access to the site via frontage roads connecting to the Massachusetts Avenue and Albany Street ramps and to the South Boston Haul (or Bypass) Road. The Haul Road is presently under construction as part of the Central Artery/Third Harbor Tunnel improvements. The Haul Road will provide a direct connection for taxis, buses and other High Occupancy Vehicles to the Third Harbor Tunnel and Logan Airport. This road will also provide direct connection to the developing Fan Pier area, the World Trade Center and planned hotel expansion in the Northern Avenue section of South Boston. Direct road connections both into the site and into the adjacent incinerator site south of Route I-93 could potentially be developed from the Massachusetts Avenue/Haul Road network as part of the CA/T project.

The site is accessible, within a 12 minute walk, to the current MBTA Red Line stations at Broadway and Andrew Square in South Boston. The presence of railroad and subway lines and yards adjacent to the site creates several additional opportunities for transit connections to the site. Commuter rail service shuttles directly from Back Bay Station could be initiated. A commuter rail stop on the Dorchester Branch of the MBTA commuter rail could be provided on the site.

Direct access to the site or access via South Station can be provided from all South Side and AMTRAK rail service. Commuter rail access would connect the facility by transit to the Worcester and Providence markets and communities currently served by South Side service and planned Old Colony service. AMTRAK service would connect the site to Connecticut to and New York.

As part of the Old Colony Railroad Restoration Project there would be potential to build a combination Red Line subway/Old Colony Railroad platform in the South Bay area and connect the platform to the stadium site via a walk way over the rail yard. Alternately, Red Line service into the site from the south can be provided through the Cabot Yard.

On a longer term basis, circumferential transit service, currently under study by the MBTA, would link this area with South Station and with the Ruggles and Longwood areas to the west.

Surface parking for 5000 cars and structured parking for 3000 cars could be developed on the site to accommodate a stadium. Potential rail shuttles discussed above could connect to the parking garage planned for over 1000 cars at South Station and to additional parking in the Back Bay area. Due to the location of the site at the nexus of regional highways and mass transit corridors, the site is not currently a pedestrian destination. However, this location minimizes impact on existing residential neighborhoods, which are bufferred by transportation corridors and commercial and industrial uses from potential stadium use. The location at the hub of transportation also would create a landmark location with high visibility by hundreds of thousand of daily travelers by highway, rail and air.

The land consists of about 140 feet of fill, organics and clay to bedrock, and the water table is close to the surface. Lithologically, the bedrock quality is average or better than in some areas surrounding Boston. The Roxbury Canal and Dorchester Brook carry runoff across the site to the Fort Point Channel in concrete box sections. Having been used as railroad yards and for commercial and industrial uses, the subsurface environment would have to be analyzed to determine environmental conditions.

Land for potential expansion of the site exists to the south of Route I-93 at the site of the abandoned City of Boston incinerator and toward Southampton Street and north to the Fort Point Channel. The land to the south offers potential to house induced and supporting commercial use, and planned uses, such as a hotel, related to the South End Technology Center to the west of Route I-93 could also be supported by stadium use. Although opportunities to promote civic/cultural uses seem limited, connections to the Fort Point Channel could support revitalization of that waterfront and encourage adjacent outdoor recreational use.

The site is occupied by buildings housing wholesale produce distributors, by City of Boston garaging and towing facilities and by some commuter rail support facilities. AMTRAK has an easement for a track which loops through the site to turn around AMTRAK trains and provide access to a train washing facility. The loop could potentially be moved somewhat and still accommodate these functions, and could also be used to provide additional rail access directly to a stadium.

B. BOSTON - STATE HOSPITAL

The 195 acre Boston State Hospital site is located between the Dorchester, Jamaica Plain and Roslindale neighborhoods of Boston in an area of cemeteries and parks, including Franklin Park. The site is zoned for single-family residential use with residential uses

nearby. The site itself contains a series of institutional buildings formerly housing the Boston State Hospital and most recently used to provide social services.

Roadway access to the site is provided via Morton Street (Route 203), the American Legion Highway and Blue Hill Avenue (Route 28). Morton Street and the American Legion Highway are four-lane divided parkway-style roads with unrestricted access by abutting commercial, residential and institutional uses and with at-grade intersections, traffic lights and traffic rotaries. Morton Street connects to the Jamaicaway on the west and becomes Gallivan Boulevard to the east. Gallivan Boulevard is lined with one- and two-family homes and commercial development until it connects to the Southeast Expressway at Neponset Circle.

Blue Hill Avenue is a four-lane arterial street lined with residential and commercial uses, and functions as one of the main streets of Roxbury, Dorchester and Mattapan. The cost of developing access to the Interstate highway network, such as creating limited access roads along the path of Gallivan Boulevard to the Southeast Expressway or south along Blue Hill Avenue through Milton to Route 128 would be very high, and the residential and commercial relocation which would be required is beyond levels acceptable in current day Boston.

The location of the site within a residential area would create traffic and parking impacts on nearby residential areas. Except for nearby residents, the site is not a pedestrian destination. The site is adequate in size to develop needed surface parking spaces on site.

Although the site is within half mile of two commuter rail lines and is accessible by bus to Forest Hills Station on the MBTA Orange Line, there is not opportunity to develop fixed rail service directly to the site. Mass transit access would be provided by shuttle bus to Forest Hills Station.

The site consists of rolling hills and would not offer major geotechnical challenges. Major electrical, water and sewer utilities are available to the site. A Massachusetts Water Resources Authority water tunnel crosses the site. Environmental considerations would consist of removal of asbestos in the abandoned steam system and potentially in buildings to be demolished, and the possibility of dump sites on the property, since the site was used as a hospital for decades.

Traffic and noise generated by a stadium would not be compatible with nearby one-, two- and three-family residences. There would be some potential for adjacent outdoor recreational uses in conjunction with stadium development, but limited potential for civic and cultural uses due to the location of the site away from major concentrations of commercial centers and tourists. With its location away from major highways, the site offers limited potential for a landmark setting. Except for on the site itself, the possibility of adjacent induced development would be limited, and most likely incompatible with surrounding residential and park uses.

The property is currently owned by the Commonwealth of Massachusetts and is largely unused except for some remaining social service agencies. Land acquisition and development issues would be minimal.

C. CAMBRIDGE

The approximately 46 acre site, known as the Boston and Maine Piggyback Yard, is located in East Cambridge with portions in Somerville and the Charlestown section of Boston. The crescent shaped site is located within the area bounded by the O'Brien Highway (Routes 28) and the MBTA Green Line on the west, Interstate Route I-93 and the MBTA Orange Line on the east and the Gilmore Bridge on the south. The heavily used Gilmore Bridge connects major northbound and westbound traffic paths, e.g. Route I-93 with Storrow Drive.

Providing access to the site, the O'Brien Highway is an undivided arterial roadway with direct access to many major facilities and commercial activities, with adjacent uses ranging from the Museum of Science to a car wash. The connection of the O'Brien Highway to downtown Boston is via a dam with an active drawbridge. The O'Brien Highway and the Gilmore Bridge, and particularly the intersection of these routes, are congested much of the day. It is unlikely these roads with their present capacity would be able to accommodate effectively the peak loading created by a potential stadium.

However, the site is adjacent to Interstate Route 93 and near the $250 million Central Artery North Area (CANA) project to improve regional transportation. The quality of traffic access and movement to and from the site would be greatly improved if direct access could be developed to the site from I-93 and/or across the railroad yards to Rutherford Avenue in Charleston. The former action would involve constructing ramps to the site from the I-93 viaduct and the latter would involve creating a second Gilmore Bridge, or major reconstruction of the Gilmore Bridge and its intersection with the O'Brien Highway.

The MBTA plans to relocate nearby Lechmere Station on the Green Line to an area north of the O'Brien Highway and directly adjacent to the site, with eventual plans to extend the Green Line farther north. Community College Station on the MBTA Orange Line is a several minute walk across railroad tracks, and pedestrian access via the Gilmore Bridge could be developed to the site. Longer term transit plans are to connect this area with central Cambridge and the Longwood area of Boston via circumferential transit service.

North Side MBTA commuter rail lines run along the site, and a new commuter rail station, possibly in conjunction with a new Lechmere subway station and consolidating of active rail lines through the area, could be developed. A shuttle from nearby North Station and the greater than 1,000 car parking garage under construction could readily

be initiated (potential conflict with Boston Garden events in the use of garage parking spaces would be a consideration in the availability of the parking spaces).

A combination of surface and structured parking could be developed on the site. About 3,000 surface spaces could be provided and structured parking of the order of 5,000 spaces could be developed in air rights over MBTA yards near the Boston Engine Terminal. The parking currently allowed by zoning on the portion of the site in Cambridge is based upon access from the O'Brien Highway. From both a traffic access and land use regulation point of view, developing access directly from Interstate Route I-93 and/or from Rutherford Avenue in Charlestown would be needed to make the site viable as a potential stadium location.

As filled land, the site is about 70 feet to bedrock. Lithologically, the bedrock is of poorer than average quality for construction than in other nearby areas of Boston. The water table is close to the surface. Having been used for decades as a railroad yard and for related heavy industrial and commercial uses, such as a trash transfer station, the subsurface environment would have to be analyzed to determine environmental conditions.

Direct pedestrian access to the East Cambridge neighborhood, the redeveloping Lechmere Canal and Kendall Square areas and to the Charles River Esplanade support existing commercial activities, including nearby hotels and restaurants, and would promote new development and civic/cultural uses. The site has potential for adjacent outdoor recreational use, including redevelopment of a nearby portion of underutilized riverfront property near the confluence of the Charles River and the Lechmere Canal.

A stadium would not be incompatible with neighboring commercial, industrial and transportation corridor uses. However, the direct access to East Cambridge could raise the question of compatibility with and impact on that neighborhood. Bounded by transportation corridors, the East Cambridge neighborhood and the Charles River, the site would require acquisition of additional industrial properties or air rights over the railroad tracks for expansion.

With high visibility from the Interstate Route 93 viaduct, the Gilmore Bridge and the Charles River, the site has potential to become a landmark.

Most of the property is in single ownership by the Guilford Corporation, the parent corporation of the Boston and Maine Railroad. Adjacent properties are generally small office and industrial buildings, whose occupants would be relatively easy to relocate in the current market environment. Although the land is not actively used for railroad purposes at present, it would fall under regulations for railroad property. As an example, its being exempt from local government eminent domain would be debatable and the property would be subject to review by the Executive Office of Transportation and Construction for disposition of former railroad land.

D. FOXBORO

The 336 acre site is the current location of Foxboro Stadium and Foxboro Race Track. The site is in the area generally bordered by Route 1 on the west, North Street on the east and Cross Street on the south in Foxboro. The site is presently occupied by the open air Foxboro Stadium seating about 61,000 and practice facility; the race track, grandstand, stable areas and ancillary functions for horse harness racing; surface parking for about 13,000 automobiles; and, a trailer park.

Regional access to the site is provided via a four-mile stretch of Route 1 which connects to Interstate Route 95 on the north and Interstate Route 495 on the south. These interstates in turn provide highway access to eastern Massachusetts, Rhode Island and Central Massachusetts markets.

Route 1 is a four-lane undivided highway with direct access to commercial and residential properties. During football games and other events, traffic lanes are temporarily reorganized with the aid of traffic cones, and traffic flow is managed by police to maximize the traffic flow along local roads. Stadium owners have proposed to the state the widening of Route 1 to six lanes in this segment, with two travel lanes in each direction and two reversible travel lanes. An additional traffic improvement would be to reroute Route 1 to the west around an adjacent private parking area to consolidate parking areas and minimize conflict between vehicles and pedestrians who currently walk along Route 1 from satellite private lots.

There are about 13,000 surface parking spaces on site and approximately 5,000 surface parking spaces available on nearby private lots. Room exists for expansion of surface parking on the site. Due to its suburban location, the site is not a pedestrian destination.

For football games and some other large events the MBTA runs commuter rail shuttles to the site from South Station using a temporary station along a branch connecting to the south to the Shore Line to Attleboro and Providence. Rough estimates are that about 600-700 people typically use the train for football games. The station could be upgraded to a permanent station and commuter rail service could also potentially be extended north along the branch to connect into the Franklin Branch of the MBTA commuter rail service.

The sandy site does not exhibit geotechnical challenges, although wetlands would be a consideration in expansion. When the racetrack was reopened in 1992 some environmental analysis was done of the site and no major subsurface environmental problems were encountered. Utilities including water service and septic service for the stadium and the racetrack are in place.

The parcel size offers room for expansion. The stadium has coexisted with its commercial neighbors along Route 1 and residential neighbors nearby, although an issue in the community has been licensing of special events at the stadium and concern for impact upon the community.

The presence of the stadium at its current location for about 20 years has not generated adjacent commercial, outdoor recreational or civic/cultural uses beyond satellite parking. The site is visible from Route 1 but not from other major travel paths. Where the site is in single ownership and currently in stadium use, land acquisition and development issues would be minimal.

E. LYNN

The roughly 72 acre site is located in the southeastern portion of Lynn and is bounded on the west by Route 1A (the Lynnway), on the north by Harding Street, on the east by Lynn Harbor and on the south by the Pines and Saugus Rivers.

Traffic access from the north and south is provided by the Lynnway, a divided six-lane MDC road. Recently reconstructed and upgraded, the Lynnway has signalized, at-grade intersections and extensive direct commercial access. Directly south of the site, Route 1A crosses the General Edwards Bridge, spanning the Pines and Saugus Rivers with an active drawbridge. Additional access for north-south traffic could potentially be developed from Route 107 across the adjacent General Electric Riverworks property. Also called Western Avenue, Route 107 is a two- to four-lane arterial street in Lynn providing access to GE and continuous access to homes and commercial activities. Access from Route 1, Route 95 and points west would come across the city of Lynn via Route 129, a series of two-lane arterial streets lined with houses and stores. Route 129 is scheduled for upgrading as part of an upgrading of urban main streets. Located on the harbor, the site offers opportunity for water shuttle access.

A permanent commuter rail station could be developed to serve the stadium along the Eastern Branch of the MBTA commuter rail system at the Riverworks adjacent to the site. Wonderland Station of the MBTA Blue Line is approximately three miles south and could be connected to the site via shuttle buses. Extension of the Blue Line north to Lynn has been discussed historically, but is not presently under consideration due to economic and environmental reasons.

With a stadium, the site could accommodate approximately 5,000 cars in surface parking. An additional 5,000 spaces could potentially be leased from General Electric, with spaces located south of the Saugus River requiring shuttle buses. Up to 1,000 spaces could be available at the Market Street commuter rail parking garage about a mile to the north and additional spaces may be available at commercial and industrial establishments along Route 1A.

Bordered by commercial and industrial uses and the harbor, the use would not be incompatible with surrounding neighborhoods. This bordering would also generally allow expansion only in one direction, to the north, with additional takings of commercial and industrial properties and the capped municipal landfill.

Although not in a location to become a major pedestrian destination or encourage major adjacent civic and cultural uses, the site is accessible by pedestrians and could spur adjacent commercial use, such as restaurants and hotels along Route 1A. Located along the harbor, the site wold require a waterfront setback (being subject to Chapter 91 of Massachusetts General Laws) and offers opportunity for adjacent outdoor recreational uses. The site has landmark potential for travellers along the Lynnway, travelling the Eastern Branch of the MBTA commuter rail and by air and by water.

As filled shorefront, the site consists of 80-130 feet of rubbish, sand and clay to bedrock. The northeast portion of the site includes a portion of the capped Lynn landfill, and New England Power Company high voltage lines run along the east and south edges of the site. As filled land, and particularly a capped landfill, subsurface analysis would be performed and potential clean up of subsurface hazardous environmental materials be considered.

Approximately 25 landowners are involved with the property, and commercial activities such as Building 19 7/8 and an auto dealership would have to be taken by eminent domain, relocated and the buildings demolished. The commercial properties would need to be relocated to comparable high traffic, high visibility locations along major arterials.

F. WORCESTER

The roughly 50 acre site is located at the edge of downtown Worcester largely east of Interstate Route I-290 in the Washington Square area. The site is bounded by I-290 on the west, Franklin Street on the north, Suffolk Street on the east and Grafton Street on the south. Included is a contiguous parcel west of I-290 bounded by the Providence and Worcester Railroad tracks on the north, I-290 on the east, Temple Street on the south and Harding Street on the west. A second adjacent parcel of approximately 20 acres of land currently used by Conrail is potentially available north of Franklin Street. Although in the same area as the site described in the first draft of this report and exhibiting the same attributes, the boundaries of the site have been changed somewhat by the Worcester Stadium Committee to better accommodate stadium use.

Route I-290 connects to Routes I-90, I-190, I-395 and I-495, providing direct interstate access to New Hampshire, Rhode Island and Connecticut markets as well as eastern Massachusetts.

Three sets of access ramps to/from Route I-290 are in the immediate area, and the site is accessible via a range of downtown and major city streets. To accommodate peak stadium volumes, the ramps to Route I-290 at Grafton Street would need to redesigned. This redesign is also being considered in relation to a range of other pending downtown development, such as the conversion of Union Station into an intermodal transportation center, the construction of the Medical City complex and the planned expansion of the Worcester Galleria. The plan is to serve the Intermodal Transportation Center, adjacent to the site, by commuter rail service by 1994, as well as existing AMTRAK service, commuter bus and local bus service.

At present, substantial parking exits within walking distance to serve the Worcester Galleria (4,000 spaces), the Worcester Centrum and downtown office and retail uses, and many of these spaces would potentially be available to be used for events at the stadium. If some combination of the planned downtown developments occurs, some of the land now used for parking will be occupied by development, and in turn will generate additional demand for parking. Some balance of on-site and off-site parking would need to be developed. With the addition of the railroad land north of Franklin Street, surface parking for about 3,000 cars and structured parking for 5,000 cars could be provided on site.

Use of mass transit by potential patrons of a stadium and use of nearby parking is dependent on improving pedestrian connections and tying the elements together. Connecting the site with downtown and planned development would support existing hotel and retail activity downtown as well as generate substantial potential for new induced commercial and retail development, and civic and cultural uses. Limited opportunity exits for stimulating adjacent outdoor recreation uses, but opportunity exists to create a landmark setting, as the site would be visible from I-290 as well as the adjacent downtown area and surrounding hills.

Stadium use would be generally compatible with nearby downtown activities and adjacent transportation corridors. One issue would be relationship to the multi-family residential neighborhood east of Suffolk Street, where potential incompatibility of traffic, parking and noise could be a concern.

Land acquisition would entail taking by eminent domain and relocation of a range of commercial and industrial uses, such as meatpacking plants, by an amending of the urban renewal plan of the city. An issue would be the need for the Conrail land north of Franklin Street; land actively used by Conrail would not be within the jurisdiction of the eminent domain powers of the city.

Geotechnical conditions in the area are favorable to construction with bedrock within 15-40 feet and fill or wetland conditions not anticipated. Since the site has been used for relatively heavy industrial and commercial activities for decades, the subsurface environmental would have to be analyzed to determine environmental issues.

3.2.1 Conceptual Stadium Layouts

Conceptual layouts have been developed for the Boston - South Bay, Cambridge, Lynn and Worcester sites. The proponents of the Foxboro site provided a sketch of the concept of an expanded Foxboro Stadium. A layout for the Boston - State Hospital site was not developed because cost estimates for infrastructure in previous Section A of the Cost Estimate section, "Infrastructure Cost Estimates", indicated that developing access of an order comparable to the other sites under consideration and necessary for a stadium to function efficiently would not be feasible.

A. BOSTON - SOUTH BAY

The open air stadium at the South Bay site is oriented as required to minimize the impact of the sun as its relates to the field of play. The stadium is also placed to help terminate the axis of the access road as it intersects Interstate Route 93 to the east of the stadium as well as responding to he curvature of Interstate Route 93. The elevated Haul Road reduces the perceived height of the stadium structure. The existing maintenance train tracks that bisect the site should be relocated to allow for larger and more contiguous parking adjacent to the stadium. Parking is placed toward the north section of the site allowing for the most efficient points of access and egress. Although the exiting gas tanks to the east of the stadium restrict the placement of the structure, the stadium service area could be located adjacent to them, thereby keeping the service areas away from the areas along the public right-of-way. An elevated public plaza may be created to link the Haul Road with the main concourse level of the stadium along the southwest edge. From within the stadium, views of the downtown are should be accommodated through the stadium configuration.

Although the existing AMTRAK loop would be relocated, access in and out of the site may still be affected when the track is in use.

B. CAMBRIDGE

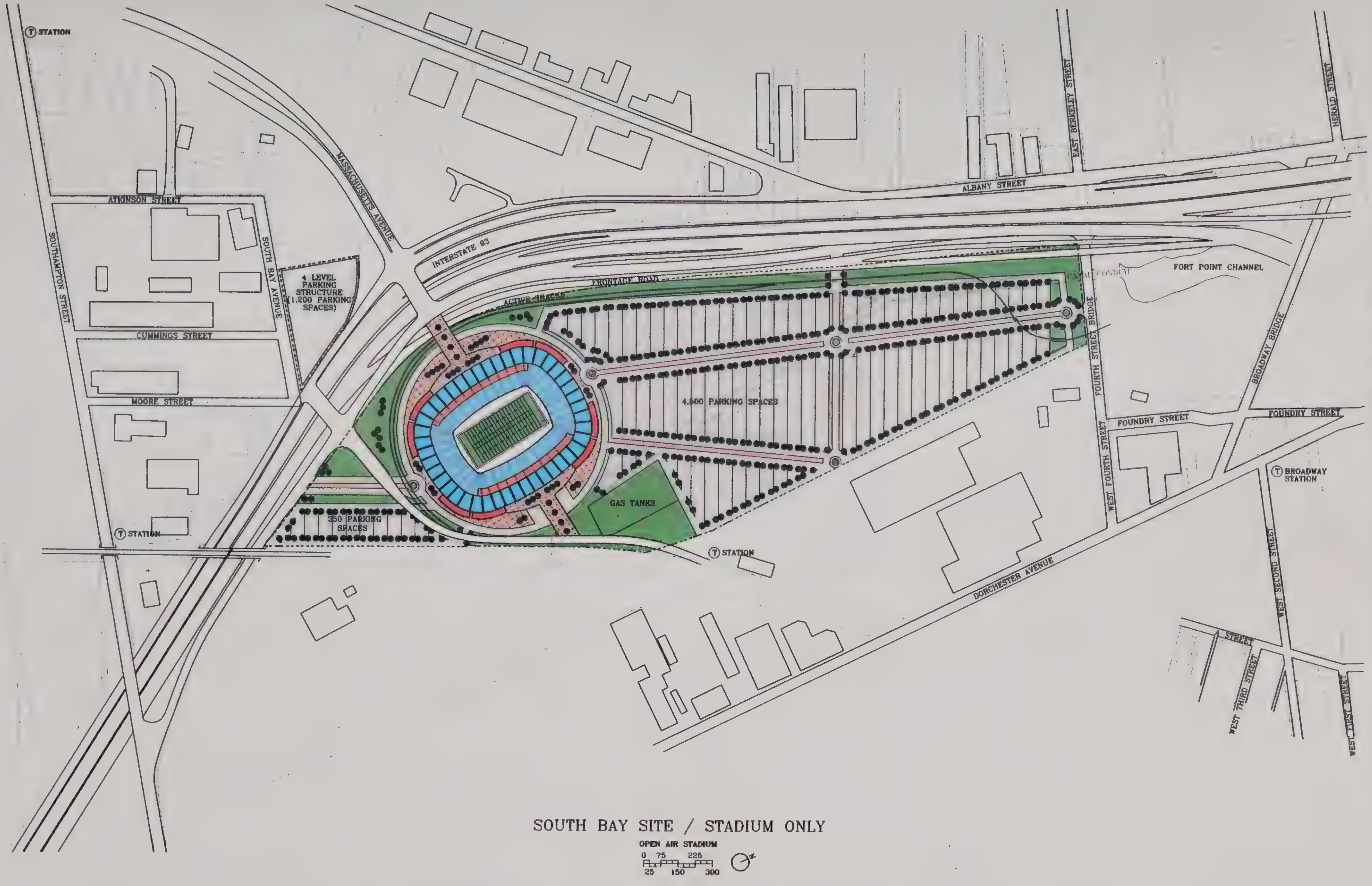
The open air stadium at the Cambridge site is placed adjacent to the Gilmore Bridge at the widest extent of the site, oriented with its longest axis setting parallel with Route I-93 and the O'Brien Highway. This will result in a positive relationship to the O'Brien Highway street frontage, capitalize on the presence of the Gilmore Bridge to help reduce the mass of the stadium and provide a potential access point to the main level concourse from the Orange Line MBTA station. The stadium will be properly oriented to provide optimum playing conditions relative to the sun position during the game. An entry plaza at the corner of the Gilmore Bridge and the O'Brien Highway will provide an appropriately scaled outdoor public space. Surface parking can be provided at the northern section of the site, as well as a parking structure over existing train tracks northeast of the stadium, with a pedestrian bridge to the stadium at eh main concourse level.

C. LYNN

The open air stadium is placed to avoid the rubbish fill limits while also providing the proper sun orientation for the playing field. Although the stadium does not directly respond to the frontage of the surrounding roads, the orientation could allow for the creation of a main entrance and plaza space at the intersection of the Lynnway and Harding Street. If parts of the rubbish fill are removed, the stadium could be placed closer to this intersection and provide for additional parking in the southwestern part of the site. The exiting electric power lines negate the possibility of placing the stadium in the southern most section of the site along the curve of Lynn Harbor.

D. WORCESTER

An open air stadium at the Worcester site is oriented to place the longitudinal axis of the stadium toward a northwesterly direction, thus providing the proper sun orientation for the playing field. This orientation also helps the stadium turn the gradual curve of Grafton and Interstate Route I-290. Strong pedestrian connections to Washington Square and the downtown area could be developed via Franklin Street. Parking will exit on the rest of the site with the service areas located on the southeast side of the stadium.


STATION
SOUTHAMPTON STREET
ATKINSON STREET
SOUTH BAY AVENUE
CUMMINGS STREET
MOORE STREET
STATION
MASSACHUSETTS AVENUE
4 LEVEL PARKING STRUCTURE (1,200 PARKING SPACES)
INTERSTATE 93
FRONTAGE ROAD
ACTIVE TRACKS
350 PARKING SPACES
4,500 PARKING SPACES
GAS TANKS
STATION
ALBANY STREET
EAST BERKELEY STREET
HERALD STREET
FORT POINT CHANNEL
FOURTH STREET BRIDGE
BROADWAY BRIDGE
FOUNDRY STREET
FOUNDRY STREET
WEST FOURTH STREET
BROADWAY STATION
DORCHESTER AVENUE
WEST SECOND STREET
WEST THIRD STREET
STREET
WEST FIRST STREET
OPEN AIR STADIUM
0 75 225
25 150 300

SOUTH BAY SITE / STADIUM ONLY

C O M M O N W E A L T H O F M A S S A C H U S E T T S

Professional Sports And Exhibition Complex Feasibility Analysis

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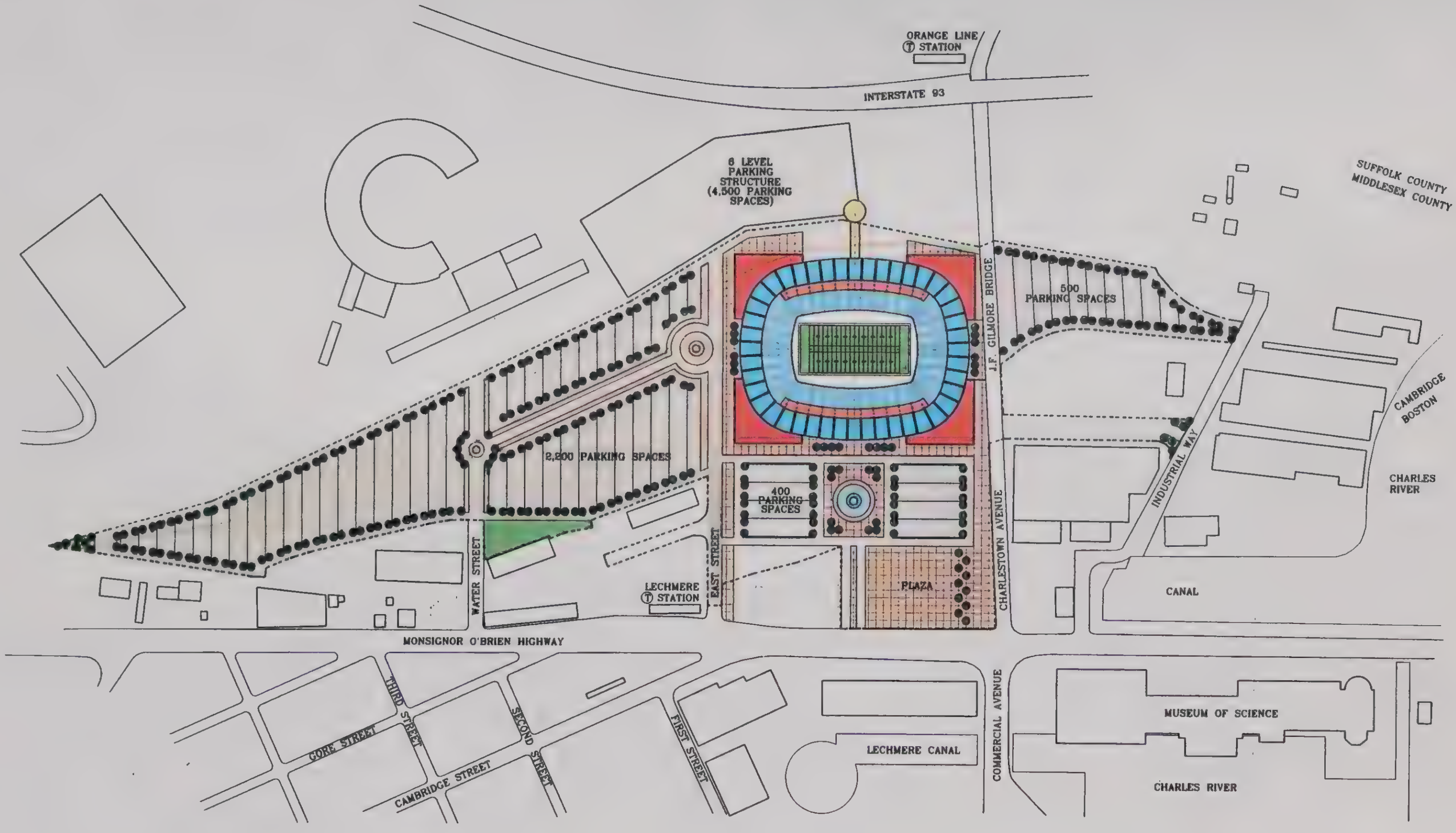
ORANGE LINE
Ⓣ STATION
INTERSTATE 93
6 LEVEL PARKING STRUCTURE (4,500 PARKING SPACES)
SUFFOLK COUNTY
MIDDLESEX COUNTY
J.F. GILMORE BRIDGE
500 PARKING SPACES
CAMBRIDGE
BOSTON
CHARLES RIVER
INDUSTRIAL WAY
2,200 PARKING SPACES
400 PARKING SPACES
CHARLESTOWN AVENUE
PLAZA
CANAL
EAST STREET
LECHMERE
Ⓣ STATION
WATER STREET
MONSIGNOR O'BRIEN HIGHWAY
THIRD STREET
GORE STREET
SECOND STREET
CAMBRIDGE STREET
FIRST STREET
LECHMERE CANAL
COMMERCIAL AVENUE
MUSEUM OF SCIENCE
CHARLES RIVER

CAMBRIDGE SITE / STADIUM ONLY

OPEN AIR STADIUM

0 75 225
25 150 300

COMMONWEALTH OF MASSACHUSETTS

Professional Sports And Exhibition Complex Feasibility Analysis

DECEMBER 1992

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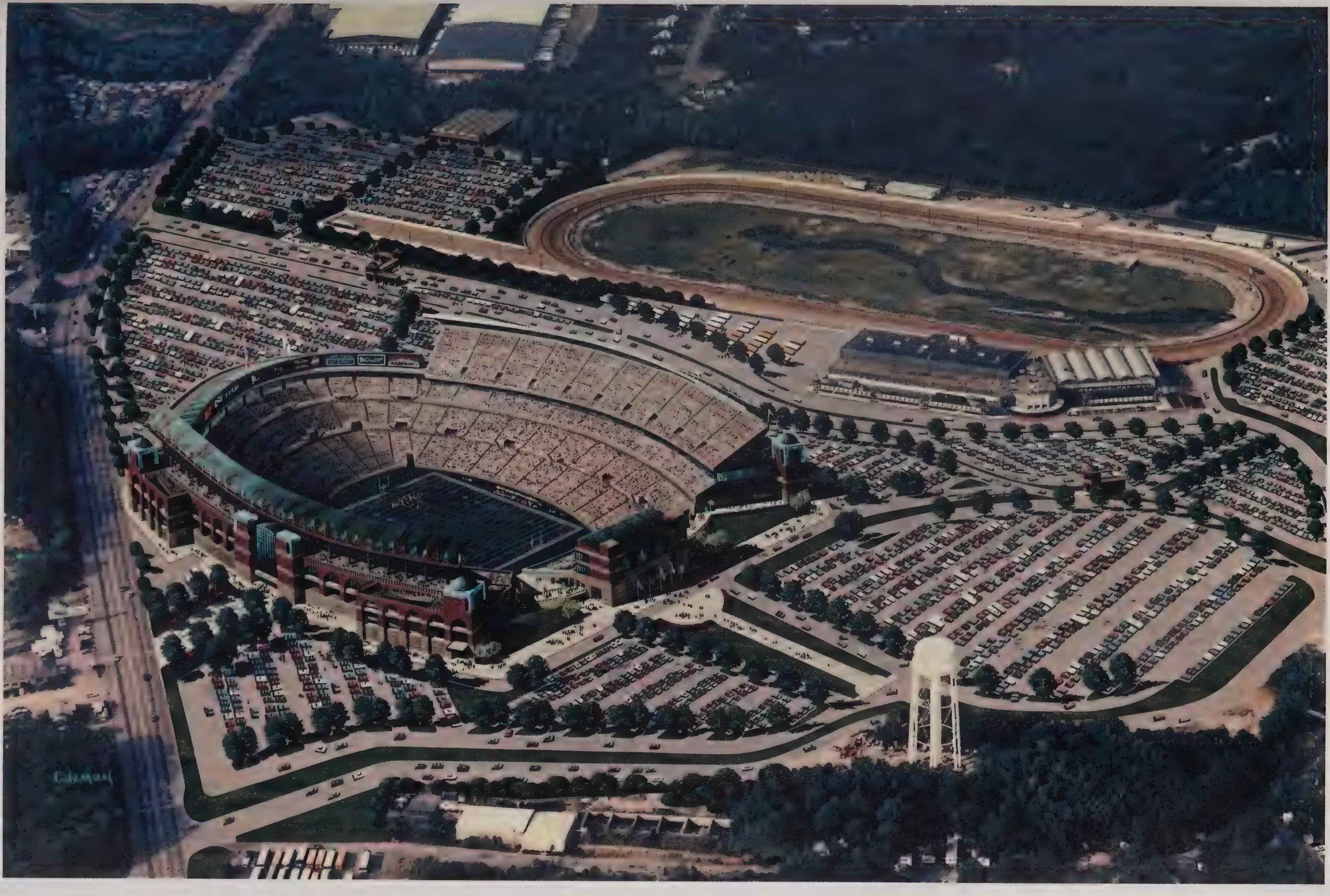
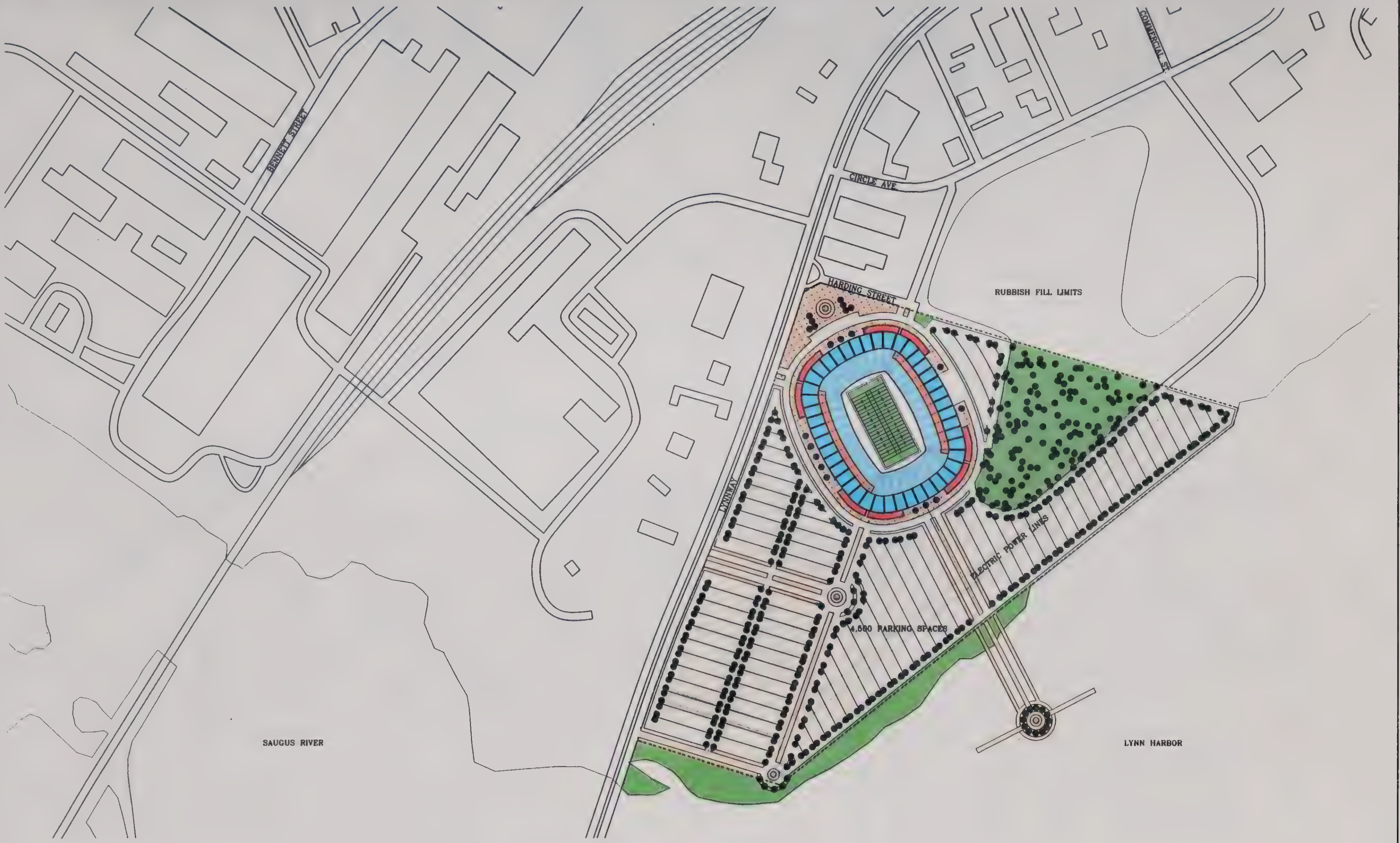



BENNETT STREET
COMMERCIAL ST.
CIRCLE AVE.
HARDING STREET
RUBBISH FILL LIMITS
LYNNWAY
ELECTRIC POWER LINES
4,600 PARKING SPACES
SAUGUS RIVER
LYNN HARBOR

LYNN HARBOR SITE / STADIUM ONLY

OPEN AIR STADIUM

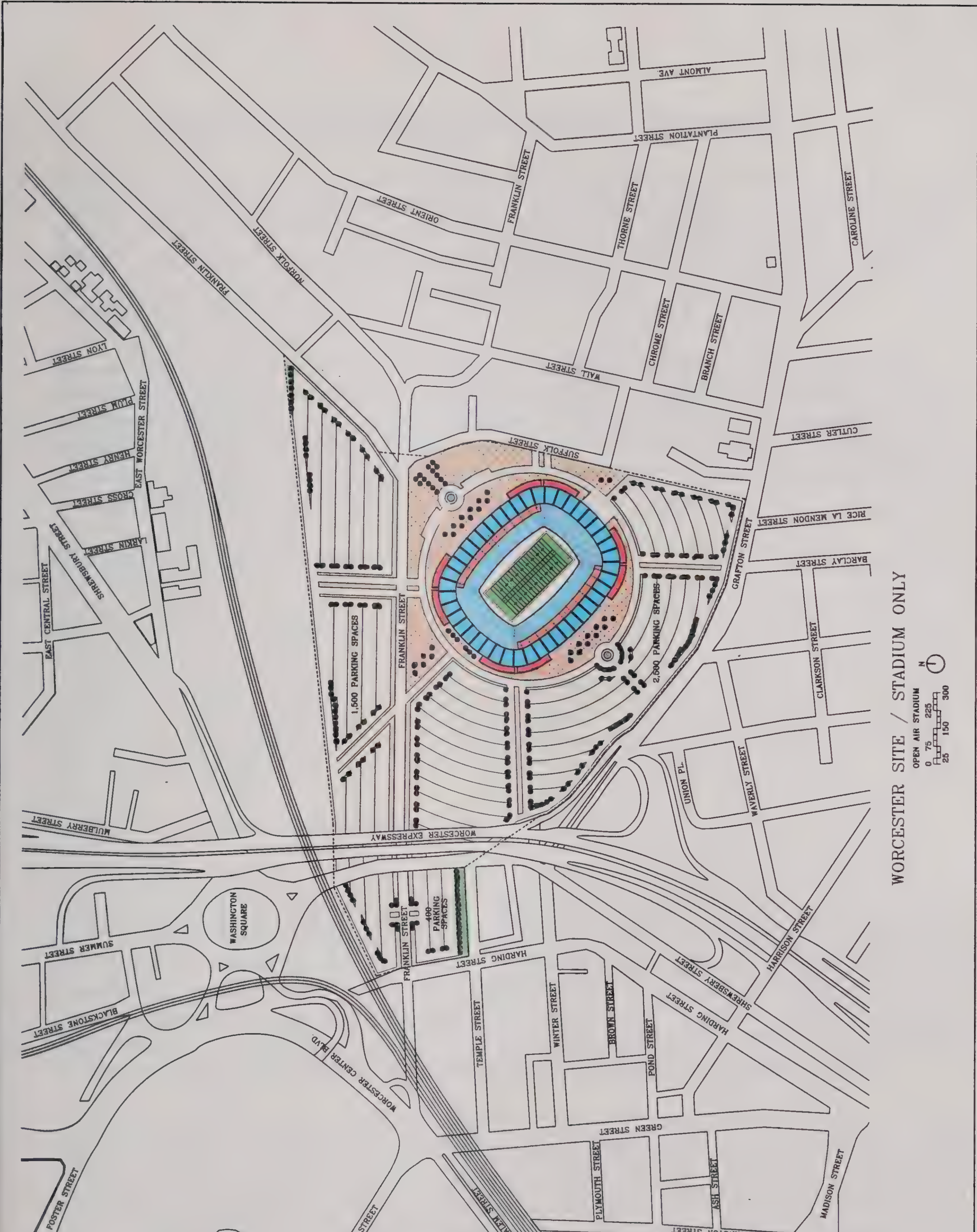
0 75 225
25 150 300
N

COMMONWEALTH OF MASSACHUSETTS

Professional Sports And Exhibition Complex Feasibility Analysis

DECEMBER 1992

HNTB Sports Architecture


ALMONT AVE
PLANTATION STREET
FRANKLIN STREET
ORIENT STREET
NORFOLK STREET
THORNE STREET
CAROLINE STREET
CHROME STREET
BRANCH STREET
WALL STREET
LYON STREET
PLUM STREET
EAST WORCESTER STREET
HENRY STREET
CROSS STREET
LARKIN STREET
SHREWSBURY STREET
EAST CENTRAL STREET
SUFFOLK STREET
CUTLER STREET
RICE LA MENDON STREET
BARCLAY STREET
GRAFTON STREET
1,500 PARKING SPACES
2,500 PARKING SPACES
CLARKSON STREET
UNION PL.
WAVERLY STREET
MULBERRY STREET
WORCESTER EXPRESSWAY
WASHINGTON SQUARE
400 PARKING SPACES
HARDING STREET
HARRISON STREET
SUMMER STREET
BLACKSTONE STREET
WORCESTER CENTER BLVD.
TEMPLE STREET
WINTER STREET
BROWN STREET
POND STREET
GREEN STREET
PLYMOUTH STREET
ASH STREET
MADISON STREET
WASHINGTON STREET
NEW SALEM STREET
FOSTER STREET
SALEM STREET
OPEN AIR STADIUM
0 25 75 150 225 300
N

WORCESTER SITE / STADIUM ONLY

COMMONWEALTH OF MASSACHUSETTS

Professional Sports And Exhibition Complex Feasibility Analysis

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3.2.2 Rating and Numerical Ranking of Stadium Sites: Matrix

A system of standards and weights was established by which the six sites were judged for their ability to support a stand alone stadium. Criteria at each site were rated on a 0 to 5 point system with 0 being poor and 5 being excellent. That number was then multiplied by a weighted factor. Weights and values related the judgement of the consulting team and were based upon their collective professional knowledge, expertise and experience. The result is the following Site Evaluation Matrix, Table 13.

It is recognized that each site needs a range of improvements such as access, parking, etc., to function effectively as a stadium in the order of 65,000 to 75,000 seats. In order to create a consistent basis for comparison, it is assumed that reasonable improvements are made to allow a stadium to function effectively at the site, and the site is rated assuming the improvements are in place. The cost of completing these improvements are included in the cost estimates previously discussed, and the cost is rated in the matrix as item F3.

The resulting ratings of the Site Evaluation Matrix are:

SITE	POINTS
Boston - South Bay	394
Worcester	354
Cambridge	349
Foxboro	328
Lynn	284
Boston - State Hospital	241

The Boston State Hospital site passed the Phase One fatal flaw screening. In Phase Two analysis, the site ranked lowest of the six sites rated in the Site Evaluation Matrix. In the critical area of traffic and access, the site rated 51 points, the lowest score of the six sites evaluated. The Boston - South Bay site, on the other hand, received 132 points. Of particular concern is not only access to the site, but the nature of traffic to and from a stadium. Stadiums generate surges of traffic just before and especially at the completion of events. The road network must be able to accommodate, or have the potential to accommodate, these surges of traffic.

Roadway access to the site is provided via Morton Street (Route 203), the American Legion Highway and Blue Hill Avenue (Route 28). Morton Street and the American Legion Highway are four-lane divided parkway style roads with unrestricted access by abutting commercial, residential and institutional uses and with at-grade intersection, traffic lights and traffic rotaries. Morton Street connect to the Jamaicaway on the west and becomes Gallivan Boulevard to the east. Gallivan Boulevard is lined with one- and two-family homes and commercial development until it connect to the Southeast Expressway at Neponset Circle. Blue Hill Avenue is a four-lane

arterial street lined with residential and commercial uses, and functions as one of the main streets of Roxbury, Dorchester and Mattapan.

Developing access from the Boston State Hospital site to the Interstate Highway network, would have to occur to the east to the Southeast Expressway (I-93/Route 3) or south to Route 128 (I-95). To the west, the only major road is the Jamaicaway, a winding parkway striped for four narrow undivided lanes of traffic. Creating limited access roads along the path of Gallivan Boulevard to the Southeast Expressway or south along Blue Hill Avenue through Milton to Route 128, would be very high cost and beyond the scope of estimating of this study. The residential and commercial relocation required to develop such access are beyond levels acceptable in current day Boston (no residences are being taken to construct the entire Central Artery/Third Harbor Tunnel project). Developing access to the site to function as a stadium on a level comparable to the other sites being analyzed would not be feasible.

Regarding mass transit, although the Boston State site passed the broad Phase One screening criterion of being located within one-half mile of fixed passenger rail line, it is the one site of the six being analyzed in Phase Two to which fixed rail mass transit could not be directly provided. The other five sites provide the opportunity for patrons to utilize mass transit by having at least one transit station on or adjacent to the site of the proposed facility. The Boston State Hospital site would require shuttle buses from the Forest Hills MBTA station or commuter rail stations to be developed on rail lines in the vicinity. Mass transit experience has shown that mode change (i.e., the switch from subway to buses) markedly reduces the attraction of mass transit options. In addition, the mode change would discourage occasional users (versus commuters) unfamiliar with the system. Therefore, the modal split to the Boston State Hospital site would be further skewed toward highway, even further exacerbating the roadway access issue.

The second most important group of weighted criteria in the Site Evaluation Matrix were Planning Considerations. In this category the Boston State Hospital site also rated lowest of the six sites evaluated. Of particularly concern is the surrounding residential nature of the area, underscored by the zoning of eh site as "residential". Considering together the incompatibly of land use with the difficulty of accommodating surges in traffic as discussed above, indicates that the site does not warrant further consideration for stadium purposes. (Other redevelopment uses, more in scale with the surrounding area, creating a more even flow of traffic and generating regular users or workers who would utilize mass transit to commute would be more in line with the characteristics of the site.)

TABLE 13
SITE EVALUATION MATRIX

SITE EVALUATION MATRIX	*Raw Scores (0 - 5)*						*%*	*Weighted Scores*					
	A	*B*	*C*	*D*	*E*	*F*	*WT*	*A*	*B*	*C*	*D*	*E*	*F*
A. Traffic and Access (30% Weight)													
1. Traffic Movements (Ingress & Egress)	*5*	*1*	*4*	*3*	*1*	*4*	*7*	*35*	*7*	*28*	*21*	*7*	*28*
2. Traffic Impacts on Adjacent Areas	*5*	*1*	*2*	*3*	*1*	*3*	*5*	*25*	*5*	*10*	*15*	*5*	*15*
3. Parking Availability/Sufficiency	*5*	*3*	*3*	*5*	*4*	*4*	*5*	*25*	*15*	*15*	*25*	*20*	*20*
4. Pedestrian	*1*	*1*	*5*	*1*	*2*	*4*	*2*	*2*	*2*	*10*	*2*	*4*	*8*
5. Metropolitan Access	*5*	*2*	*4*	*2*	*2*	*4*	*4*	*20*	*8*	*16*	*8*	*8*	*16*
6. Mass Transit	*5*	*2*	*4*	*2*	*3*	*3*	*7*	*35*	*14*	*28*	*14*	*21*	*21*
B. Engineering (10% Weight)													
1. Geotechnical	*1*	*5*	*1*	*5*	*1*	*5*	*3*	*3*	*15*	*3*	*15*	*3*	*15*
2. Utilities	*4*	*2*	*4*	*5*	*4*	*4*	*2*	*8*	*4*	*8*	*10*	*8*	*8*
3. Environmental Considerations	*2*	*3*	*2*	*5*	*2*	*2*	*5*	*10*	*15*	*10*	*25*	*10*	*10*
C. Size and Fit (10% Weight)													
1. Size of Parcel/Expandibility	*4*	*5*	*4*	*5*	*4*	*4*	*10*	*40*	*50*	*40*	*50*	*40*	*40*
D. Planning considerations (25% Weight)													
1. Compatibility to Existing Neighborhoods	*5*	*1*	*3*	*4*	*3*	*3*	*7*	*35*	*7*	*21*	*28*	*21*	*21*
2. Noise and Lighting	*5*	*2*	*4*	*3*	*4*	*3*	*1*	*5*	*2*	*4*	*3*	*4*	*3*
3. Potential for Adjacent Outdoor Recreational Uses	*3*	*3*	*4*	*3*	*3*	*2*	*5*	*15*	*15*	*20*	*15*	*15*	*10*
4. Potential for Adjacent Civic/Cultural Uses	*2*	*1*	*4*	*1*	*4*	*4*	*5*	*10*	*5*	*20*	*5*	*20*	*20*
5. Potential for "Image" or Landmark Setting	*5*	*1*	*4*	*1*	*4*	*4*	*7*	*35*	*7*	*28*	*7*	*28*	*28*
E. Economic Impact (10% Weight)													
1. Potential for Adjacent Induced Development	*5*	*1*	*5*	*1*	*4*	*5*	*10*	*50*	*10*	*50*	*10*	*40*	*50*
F. Land Acquisition/Development Cost (15% Weight)													
1. Timing/Availability	*3*	*4*	*2*	*5*	*2*	*3*	*3*	*9*	*12*	*6*	*15*	*6*	*9*
2. Ownership	*3*	*5*	*2*	*5*	*2*	*2*	*4*	*12*	*20*	*8*	*20*	*8*	*8*
3. Cost	*2*	*2*	*2*	*5*	*2*	*4*	*4*	*8*	*8*	*8*	*20*	*8*	*16*
4. Relocation of Existing	*3*	*5*	*4*	*5*	*2*	*2*	*4*	*12*	*20*	*16*	*20*	*8*	*8*
TOTALS								*394*	*241*	*349*	*328*	*284*	*354*

Key

A Boston - South Bay Area
B Boston - State Hospital
C Cambridge
D Foxboro
E Lynn
F Worcester

3.3 Convention Center

A. BOSTON - SOUTH BAY

The convention center at the South Bay site is placed in the approximate center of the site. A public entrance for the convention center has been created at the access road on the west side of the site. Prefunction space, exhibit hall entrances, the ballroom and meeting spaces are located to accommodate the front door of the facility and to create easy access for the user. Parking facilities are located to the north and to the south of the facility with connecting walkways to the entry points of the convention center.

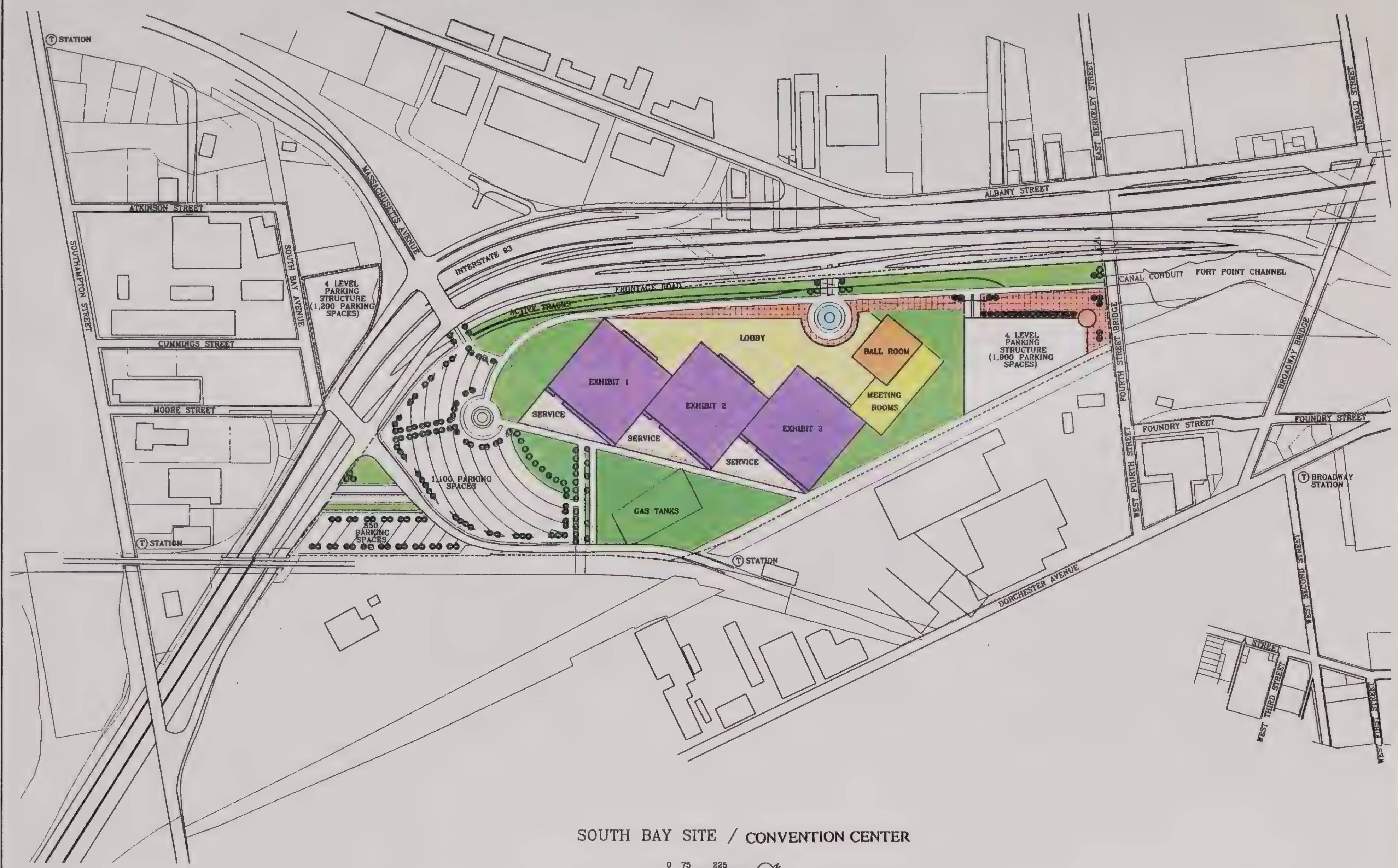
Service for the exhibit halls is located on the east side of the site, adjacent to the rail facilities. Each exhibit hall is 150,000 square feet located on one level and adjacent to the other exhibit halls to allow for large show capacity. Expansion space is available on the site for future growth.

It will be necessary to relocate the rail tracks on the west side of the site to assure proper vehicular and pedestrian movement within the site. The existing tracks in the south east portion of the site have remained in the conceptual layout. If the tanks could economically be relocated, the service area for the exhibit halls would be improved.

B. CAMBRIDGE

Three separate 150,000 square foot exhibition halls have been placed adjacent to the rail yard on the northern side of the site. The public entrance and the prefunction spaces for the exhibit halls as well as the ballroom and meeting rooms are located toward the southern side of the site with the main access from the O'Brien Highway. The conceptual layout takes advantage of the widest portion of the site for the exhibit halls. Service to the halls behind the halls on the north side of the site separate from pedestrian movement.

Limited expansion of the facility could occur in future years, however, the resulting configuration would be greatly influenced by the narrowing land configuration toward the western end of the site. Parking as shown in the current configuration would obviously be relocated or otherwise eliminated if expansion occurred to the proposed facility.


STATION
MASSACHUSETTS AVENUE
INTERSTATE 93
ALBANY STREET
EAST BERKELEY STREET
HERALD STREET
ATKINSON STREET
SOUTHAMPTON STREET
SOUTH BAY AVENUE
4 LEVEL PARKING STRUCTURE (1,200 PARKING SPACES)
FRONTAGE ROAD
ACTIVE TRACKS
CANAL CONDUIT
FORT POINT CHANNEL
BROADWAY BRIDGE
CUMMINGS STREET
LOBBY
BALL ROOM
4 LEVEL PARKING STRUCTURE (1,900 PARKING SPACES)
FOURTH STREET BRIDGE
EXHIBIT 1
EXHIBIT 2
EXHIBIT 3
MEETING ROOMS
MOORE STREET
SERVICE
SERVICE
SERVICE
FOUNDRY STREET
FOUNDRY STREET
WEST FOURTH STREET
BROADWAY STATION
1,100 PARKING SPACES
GAS TANKS
550 PARKING SPACES
STATION
STATION
DORCHESTER AVENUE
WEST SECOND STREET
STREET
WEST THIRD STREET
WEST FIRST STREET
0 75 225
25 150 300

SOUTH BAY SITE / **CONVENTION CENTER**

C O M M O N W E A L T H O F M A S S A C H U S E T T S

Professional Sports And Exhibition Complex Feasibility Analysis

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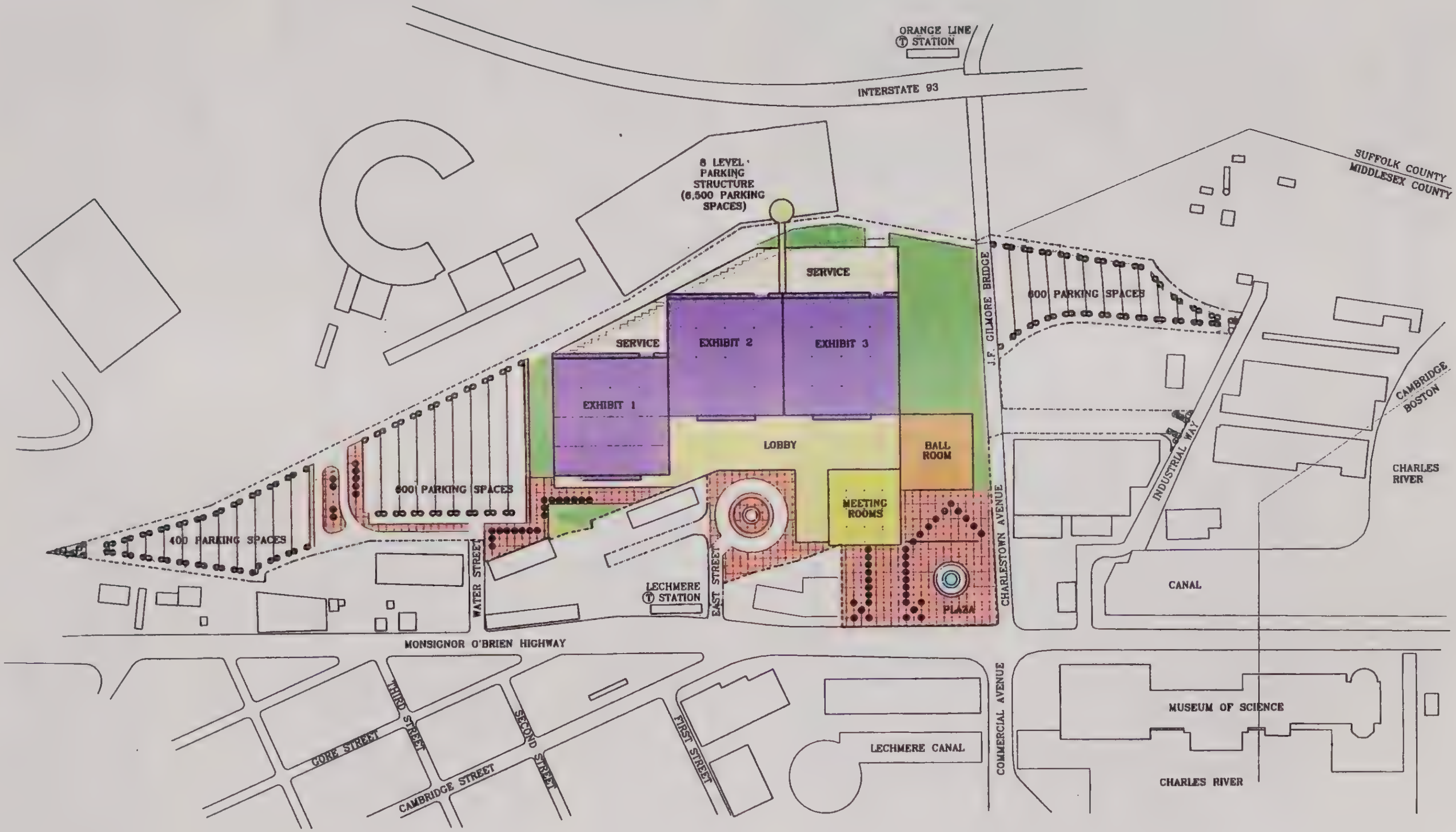
ORANGE LINE
Ⓣ STATION
INTERSTATE 93
8 LEVEL PARKING STRUCTURE (6,500 PARKING SPACES)
SUFFOLK COUNTY
MIDDLESEX COUNTY
SERVICE
EXHIBIT 1
EXHIBIT 2
EXHIBIT 3
SERVICE
J.F. GILMORE BRIDGE
600 PARKING SPACES
CAMBRIDGE
BOSTON
CHARLES RIVER
INDUSTRIAL WAY
LOBBY
BALL ROOM
MEETING ROOMS
600 PARKING SPACES
400 PARKING SPACES
CHARLESTOWN AVENUE
PLAZA
CANAL
WATER STREET
LECHMERE
Ⓣ STATION
EAST STREET
MONSIGNOR O'BRIEN HIGHWAY
THIRD STREET
GORE STREET
SECOND STREET
CAMBRIDGE STREET
FIRST STREET
LECHMERE CANAL
COMMERCIAL AVENUE
MUSEUM OF SCIENCE
CHARLES RIVER
0 75 225
25 150 300
N

CAMBRIDGE SITE / **CONVENTION CENTER**

COMMONWEALTH OF MASSACHUSETTS

Professional Sports And Exhibition Complex Feasibility Analysis

DECEMBER 1992

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3.4 Megaplex

3.4.1 Conceptual Megaplex Layouts

A. BOSTON - SOUTH BAY

At the South Bay site, the domed stadium is placed near the widest section of the site close to the intersection of Interstate Route 93 and the access road to the east of the Megaplex. The stadium located here will appropriately respond to he curvature of the highway, while the elevated Haul Road will also reduce the perceived mass of the stadium. The exhibit halls, ballroom, and two stories of meeting rooms should face Interstate Route 93 to the west, while the service areas are placed along property lines of the adjacent parcel and the existing gas tanks to be retained to the east. This configuration allows a distinct separation of public circulation and its functions from the truck loading and service functions, placing the public to the front edge and the service toward the back edge of the site. The three separate 150,000 square foot exhibit spaces step with the angled property line, allowing for separate entrance plazas on the opposite, public edge as well as a centrally located ballroom and two stories of meeting rooms. A parking structure may be placed at the remaining north portion of the site adjacent to West Fourth Street and connecting directly to the public circulation spine of the megaplex. The parking structure may be replaced by an additional exhibit hall when expansion is required.

The circulation system may be transparent toward I-93 to give the passerby an instant understanding of the exhibit spaces and the circulation system. This circulation spine could be an open, two-story space which overlooks the main floor below. The exhibit halls are all identically square and placed to eliminate dark areas within the halls when two or more are used jointly.

As mentioned, the South Bay site will allow for some additional future expansion as required. The existing maintenance train tracks that cross the property will need to be relocated to the eastern edge of the site, allowing the exhibit halls of the megaplex to be located on one main level. These tracks, however, may still interfere with access to and from the site along the Haul Road to the east and West Fourth Street to the north. The megaplex configured and placed as illustrated will allow it to appropriately be a regional landmark along I-93.

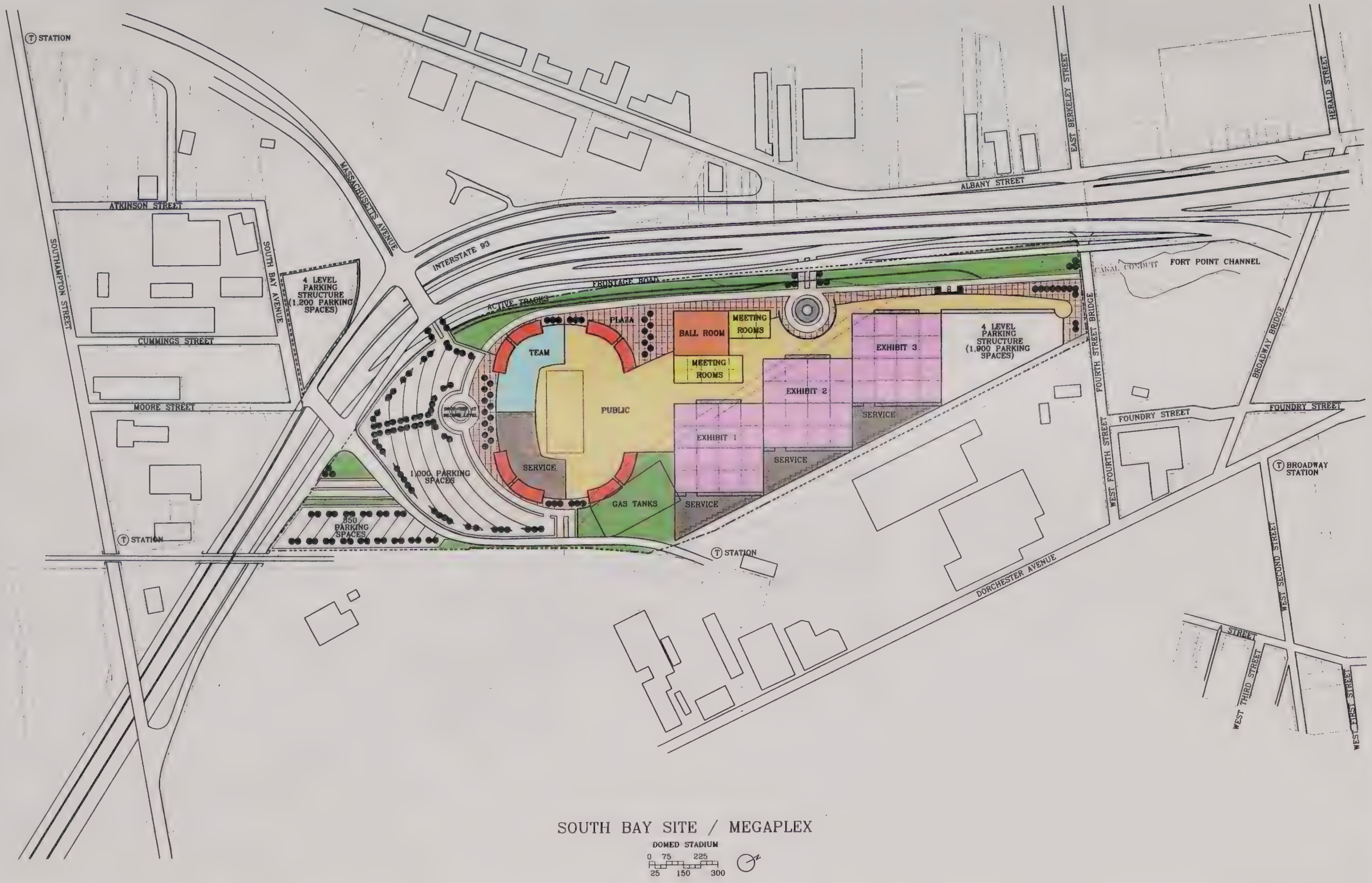
B. CAMBRIDGE

The irregular shape, relationship to public right of way, and overall size have all been significant factors in the development of the Cambridge site in establishing the position of the parts of the building and anticipating its character. The domed stadium is located adjacent to the Gilmore Bridge and faces the O'Brien Highway, anchoring the complex

at its widest corner. The elevated bridge will reduce the perceptible height of the stadium and also will provide direct pedestrian access to the main concourse level from the MBTA Orange Line Station. Three separate 150,000 square foot exhibit spaces are positioned adjacent to the stadium as they follow the angled property line to the north, and result in a stepped configuration. As the megaplex steps back from the O'Brien Highway, a corner plaza can be created at the intersection of the O'Brien Highway and the Gilmore Bridge. The two story meeting room block is centrally located to both the exhibit space and the public circulation space. The 40,000 square foot ballroom is located as a "front door" element off the entry plaza. A parking structure placed over the train tracks to the northeast adjacent to I-93 will connect via bridge for pedestrians to access the second level of the Megaplex.

The resultant plan allows for a compact and efficient Megaplex that appropriately places public circulation toward the street edge and the service circulation to the rear edge of he site, thus giving the megaplex an instantly recognizable front door along the main public street, and making access to both the public and service areas distinctly separate.

The size and shape of the Cambridge site prohibits the possibility for future expansion without acquisition of additional adjacent land. It is suggested that the properties between Water Street and the Gilmore Bridge be considered for acquisition to allow a more appropriate public prefunctioning and general circulation along the O'Brien Highway, as well as allow for the future expansion along the western border of the site.


STATION
ATKINSON STREET
SOUTHAMPTON STREET
SOUTH BAY AVENUE
CUMMINGS STREET
MOORE STREET
STATION
MASSACHUSETTS AVENUE
4 LEVEL PARKING STRUCTURE (1,200 PARKING SPACES)
INTERSTATE 93
FRONTAGE ROAD
ACTIVE TRACKS
ALBANY STREET
EAST BERKELEY STREET
HERALD STREET
PLAZA
TEAM
PUBLIC
SERVICE
BALL ROOM
MEETING ROOMS
MEETING ROOMS
EXHIBIT 1
EXHIBIT 2
EXHIBIT 3
SERVICE
SERVICE
SERVICE
GAS TANKS
1,000 PARKING SPACES
350 PARKING SPACES
STATION
4 LEVEL PARKING STRUCTURE (1,900 PARKING SPACES)
FOURTH STREET BRIDGE
WEST FOURTH STREET
CANAL CONDUIT
FORT POINT CHANNEL
BROADWAY BRIDGE
FOUNDRY STREET
FOUNDRY STREET
BROADWAY STATION
DORCHESTER AVENUE
WEST SECOND STREET
STREET
WEST THIRD STREET
WEST FIRST STREET
DOMED STADIUM
0 75 225
25 150 300

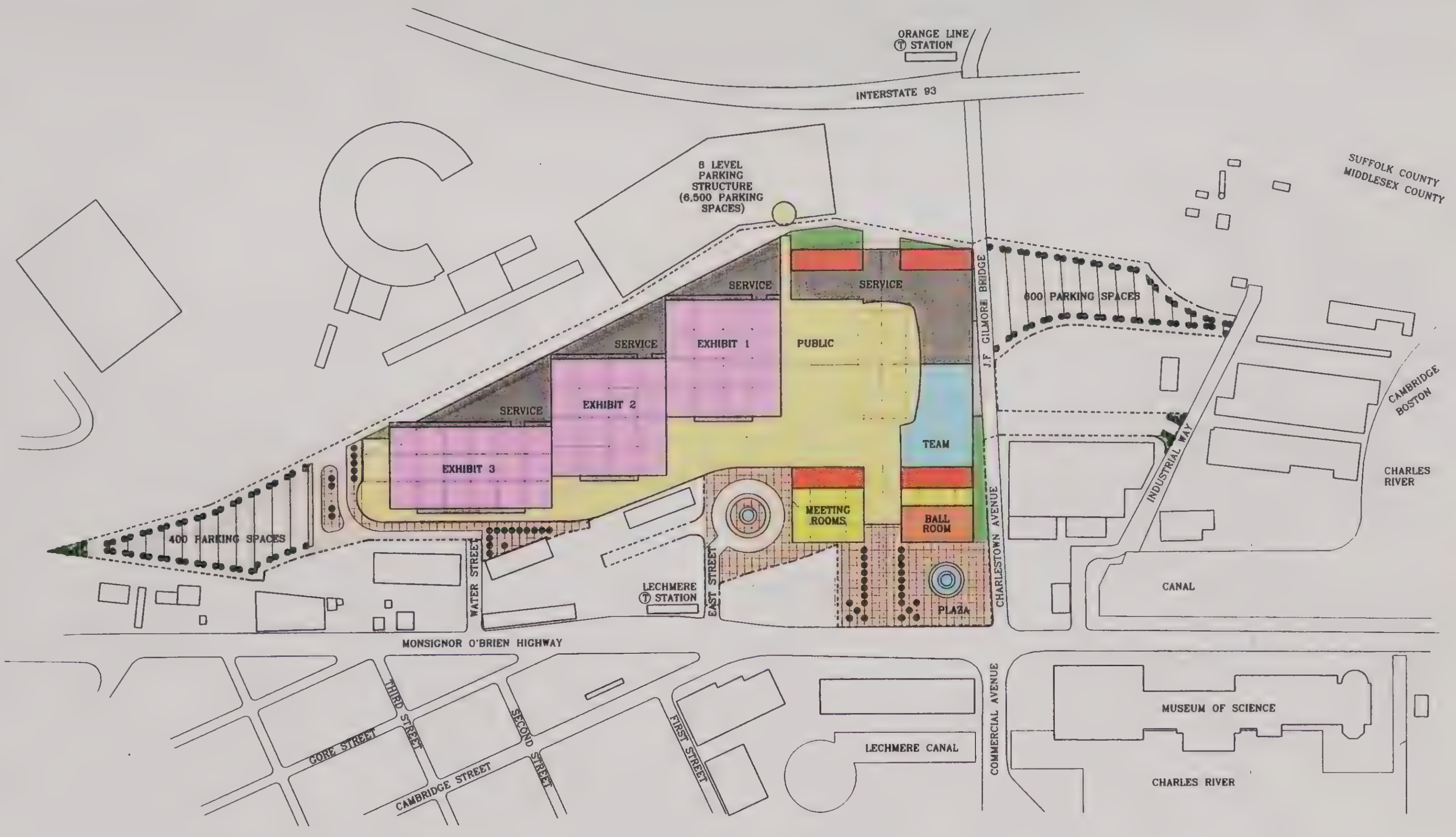
SOUTH BAY SITE / MEGAPLEX

COMMONWEALTH OF MASSACHUSETTS

Professional Sports And Exhibition Complex Feasibility Analysis

DECEMBER 1992

HNTB Sports Architecture


ORANGE LINE
Ⓣ STATION
INTERSTATE 93
SUFFOLK COUNTY
MIDDLESEX COUNTY
8 LEVEL PARKING STRUCTURE (6,500 PARKING SPACES)
SERVICE
SERVICE
SERVICE
SERVICE
600 PARKING SPACES
J.F. GILMORE BRIDGE
EXHIBIT 1
EXHIBIT 2
EXHIBIT 3
PUBLIC
TEAM
MEETING ROOMS
BALL ROOM
PLAZA
400 PARKING SPACES
CAMBRIDGE
BOSTON
CHARLES RIVER
INDUSTRIAL WAY
CHARLESTOWN AVENUE
CANAL
WATER STREET
LECHMERE Ⓣ STATION
EAST STREET
MONSIGNOR O'BRIEN HIGHWAY
THIRD STREET
SECOND STREET
FIRST STREET
GORE STREET
CAMBRIDGE STREET
COMMERCIAL AVENUE
LECHMERE CANAL
MUSEUM OF SCIENCE
CHARLES RIVER

CAMBRIDGE SITE / MEGAPLEX

DOMED STADIUM

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